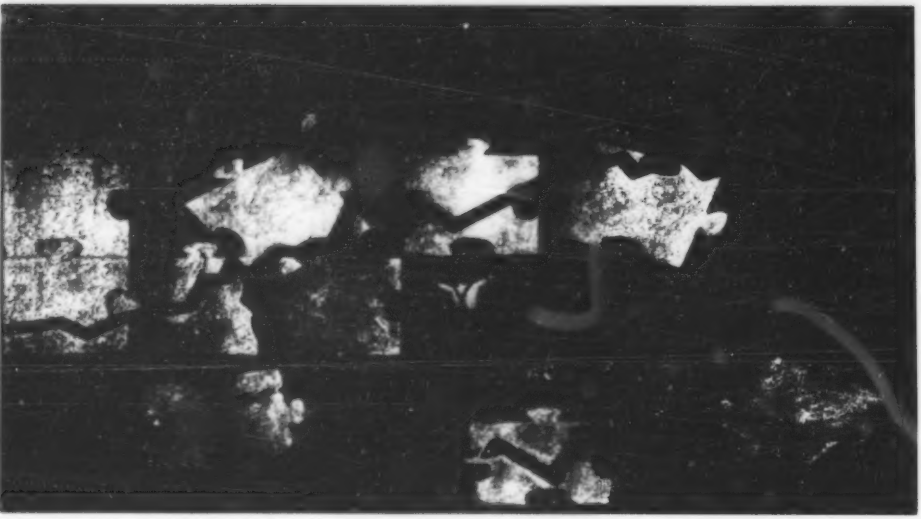
Most Favored Nation

Building a Framework for Smart Economic Policy



Jack M. Mintz

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Jack M. Mintz

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Foreword

This monograph would not have been written without a generous grant from the Donner Foundation of Canada, which was awarded to me when I was just finishing a stint in Ottawa as head of the Technical Committee on Business Taxation. I am also appreciative of Tom Kierans and Angela Ferrante, formerly of the C.D. Howe Institute, who agreed to publish the monograph once it was completed (little did we know then that I would succeed Tom as president and CEO of the Institute).

I particularly thank several other individuals for their support of this endeavor. Wendy Dobson, Director of the Institute of International Business, Joseph L. Rotman School of Management, University of Toronto, assisted with the formulation of the project's proposal and was a source of encouragement for completing the work. My close associate, Duanjie Chen, Associate Director of the International Tax Program under the Institute of International Business, was key in directing and completing research contained in the book. I also appreciate the research assistance provided by Henry Li (University of Toronto) and Shay Aba (C.D. Howe Institute). Also, thanks go to many reviewers of the text: Richard Bird, Wendy Dobson, David Laidler, Ken McKenzie, Finn Poschmann, Bill Robson, Munir Sheikh, and Michael Smart. I am also grateful to Donna Leitch, Lee d'Anjou, Marie Hubbs, and Barry Norris, who provided the technical assistance needed to make sure the book was properly edited and prepared for publication.

Much more of the thanks for the development of this monograph go to the many collaborators I have had over the years in developing the underlying theory and empirical work. This research is a culmination of two decades of work on business taxation. I am especially grateful to Robin Boadway and Neil Bruce, who worked closely with me at Queen's University in the early 1980s to develop the concept of the marginal effective tax rate on capital. They sparked my interest in this area of work, and I benefited from their guidance and friendship.

After these formative years, I became convinced that one could, in principle, model any tax system and derive a theoretical expression to measure the effective tax rate on capital. Papers were solely or jointly authored on the taxation of different forms of risk, inventories, nonrenewable resource production, tax holidays, financial intermediation, multinational investment, foreign tax credit systems, and "time to build" capital projects. There are also papers on exotic forms of royalty systems, capital taxes, and depreciation systems. I am indebted to many collaborators over the years, especially Duanjie Chen, Ken McKenzie, and Tom Tsiopoulos, who have been closely associated with me on many projects.

I became convinced, however, that much of the work on effective tax rates was going in the wrong direction. Specialists were incorporating noncapital taxes as part of the effective tax rates on capital. This procedure seemed conceptually flawed. With Ken McKenzie and Kim Scharf, I developed a new measure of effective tax rates on the cost of doing business — an aggregate of the effective tax rates imposed on various inputs to production (such as labor and capital) — an approach we adopted in a paper prepared for the Royal Commission on National Passenger Transportation. Later I used it in environmental work (with Ben Cherniavsky and Sage Traviza) and in the report of the Technical Committee on Business Taxation, which is the basis for the empirical analysis of Chapter 4 of this monograph.

The present work goes one step further than my previous efforts. Instead of simply modeling taxes, I include the impact of government subsidies, including cash grants and in-kind subsidies, on the cost of doing business.

Thus, this monograph is a summary of years of research that began with modeling effective tax rates on capital. I am grateful to all my colleagues who have worked with me during these years. Neither their views nor those of the C.D. Howe Institute's Board of Directors or members are, however, attributable to this monograph. Any errors are my sole responsibility.

Jack M. Mintz
President and
Chief Executive Officer

1 Public Policy and Global Economic Integration

The twenty-first century presents Canadians with a new set of choices. After two decades in a public sector straitjacket, we have virtually eliminated federal and provincial deficits and entered a new era of *fiscal surpluses* (where revenues exceed public expenditures). Canadian federal and provincial politicians are in the enviable position of being friends to all people; they no longer have to face cutting spending or raising taxes. They can reduce government debt, increase public expenditure, or reduce taxes, policies that favor some citizens without hurting others. Any minister of finance could take the well-known path of simply dividing the surpluses between restoring spending and cutting debt and taxes.

Meanwhile, however, a new phenomenon is rising over the horizon. During the past two decades, the international environment has changed radically. Canadians are now on Internet time. Changes to our economic environment from new technologies are so rapid that business decisions are made within days, even hours, rather than years. New communications and transportation technologies allow businesses to seek around the world for both customers and the cheapest supplies. Businesses are consolidating across borders. Financial capital moves across national boundaries

at the push of a button. Exchange-traded financial transactions are now US$13.5 trillion, and average daily turnover in foreign currency markets is US$1.5 trillion per day.[1] Canadian firms, once reliant on capital inflows, now invest as much in other countries as foreign firms invest here. The stock of foreign direct investment by Canadian businesses as a proportion of gross domestic product (GDP) has more than doubled from 9 percent in 1980 to 18 percent in 1999 (Canada 1998, 3.10). Almost a quarter of industry sales is direct or indirect exports to foreign markets (ibid., 3.9).

The consequence is that international location has become an important influence on business decisions. Although people may prefer to locate at home,[2] the environment with which they are most familiar, the reduction in communications and transportation costs has eased setting up shop in foreign countries. Thus, people increasingly are willing to compare countries' economic environments in determining the location of business activities.

Also, although the number of migrants across national boundaries has declined in terms of total populations, there is good reason to believe that labor markets are becoming increasingly integrated at the international level. Firms seek talent globally and sometimes move production to where people want to live, rather than move people to where the business is located. At the same time, in industrialized countries the workforce is aging and fertility rates have been low; as a result, the percentage of the population of working age may plateau within the next two decades (OECD 2001). Labor shortages will abound, and industrialized countries will seek immigrant workers of all skills from global labor markets. People will become more mobile in a globally integrated world.

These changes are creating a new economic order. Governments of the industrialized countries will be competing to improve

1 Taken from Bank for International Settlements surveys; see White (1998).

2 Helliwell (2000) lucidly points out that borders are still "thick" in that people and businesses are more attracted to trade at home than in other markets. As his review of the data shows, however, borders are becoming thinner in the sense that goods, services, and capital flow more easily across them.

opportunities for incomes and jobs for their citizens. Such competition will mean that the jurisdictions that provide the best package of spending and taxes will be able to attract jobs and people. Therefore, governments will have to look increasingly hard at the role they play in the economy. Currently, they account for a third to a half of the economies in industrialized countries. Their expenditure, tax, and regulatory powers have a significant impact on the economic opportunities available to their populations. If they spend tax revenues wisely in the coming years, they can offer a package of services that will attract and retain businesses and jobs. Inefficient spending and poor tax policies will impose high economic costs, undermining the economy's ability to grow.

Canadians have two choices in responding to the global economic order. We can try to minimize its impact by, say, adopting policies to protect traditional industries, restricting foreign businesses from operating here, reducing opportunities to harness technological developments from abroad, and spending taxpayers' money to counteract the impact of the knowledge-based global economy on declining industries. Or we can embrace the opportunities of global economic integration by supporting strategic public policies that create a distinctive Canadian advantage: smart public expenditure and tax policies that encourage residents to adopt the skills needed for businesses attracted to Canada as a strong economy.

This study focuses on the role of government[3] in the twenty-first century. It evaluates how public expenditure and tax policies can contribute to creating the Canadian advantage in a world with mobile capital and jobs.[4] I use a relatively new methodology to

3 Throughout, I tend to concentrate on total government expenditures and taxes. The book addresses policy issues at all levels of government, and there is little discussion about the interaction of federal, provincial, and municipal policies, despite the high degree of their importance to Canada as a federation. I do not try to analyze the state of federal-provincial relations and how they could be improved. Doing so would require another book.

4 Given the difficulty of measuring the impact of regulatory policies on the cost of doing business, this study does not consider them. Regulations can enhance...

measure the effects of spending (on education, health, infrastructure, and research and development) and of taxes (personal and business) on the cost of doing business in Canada. Putting these effects together, I calculate their combined impact on the cost of doing business in Canada and compare it to that in the United States, our largest trading partner, for various industries.

The overall conclusion is that current Canadian government expenditure and tax policies create a disadvantage for production that takes place here rather than in the United States. Even though recent federal and provincial initiatives are reducing the existing disadvantages in creating jobs in Canada, they still have some way to go. Overcoming these disadvantages is possible. It would mean further reduction in public debt, lower taxes, and increased efficiency in public programs that would also improve their effectiveness and equity. I recommend policies that would not only remove the disadvantages but also create a distinctive Canadian advantage in today's global economy.

Thus, the objective of this book is to outline a vision for the role of federal and provincial governments. In the next chapter, I describe in more detail how the process of internationalization affects economic development in Canada. The third chapter describes the evolution of the role of federal, provincial, and municipal government expenditures in this country and how it compares with that in the United States. The fourth chapter examines how expenditure and tax policies currently affect the cost of doing business in Canada. The fifth chapter offers policy recommendations that would result in a distinctive Canadian advantage by making government policies more effective. The sixth chapter is a brief conclusion.

Note 4 - cont'd.

...the efficiency of markets but also impose significant compliance costs. To evaluate the impact of regulations, it is necessary to measure both the benefits and the costs they impose on markets, a calculation requiring data that are currently not available.

2 Globalization and the Role of Government

Economic integration at the world level is a fact. Location increasingly matters in doing business, and more jobs are going to the economic environments that most appeal to workers and managers. The question is: What implications does this change have for government economic policy in building the Canadian advantage?

The idea that government policies can affect the economy when goods, services, and people are mobile is not entirely new. It goes back to an earlier notion that economists introduced for evaluating subnational government decisionmaking in federal states (see Tiebout 1956; Breton 1996; Bird 2000). By offering efficient public services at a reasonable tax price, governments in a federal state can attract jobs and people and thus improve the welfare of its residents. Competition among governments does not lead to a race to the bottom since people and firms tend to move to the jurisdiction that offers their most desired mix of public expenditure and tax policies.

The effect of deepening economic integration at the international level is similar to that of economic integration within nation-states. Capital and labor become more mobile, increasing the interaction of policies among governments. This chapter lays out the

implications of public policies for a country such as Canada as determined by the cost of doing business in it and its competitors.

The NAFTA and the New Economic Order

In some ways, the increasing internationization of economies in North America was reflected in the Canada-US Free Trade Agreement (FTA) and the North American Free Trade Agreement (NAFTA). Yet the new economic order is extending much further.

Free Trade in North America

The advent of free trade in North America has provided unique opportunities for all the NAFTA partners. The decision to locate in a jurisdiction depends on a number of factors, including infrastructure, distance from markets, size of market, and taxes. As Helliwell (2000) stresses, borders between countries can affect the degree to which goods flow within and across them.

Traditionally, transportation costs and borders have provided strong economic advantages for firms' locating production in parts of the United States. That country has the largest population in North America and the greatest consumer demand for business products. It has the largest pool of diversified, skilled labor for businesses to draw from, especially in large urban centers. It also has the world's deepest, most liquid, and most sophisticated capital market, including substantial pools of venture capital to support growing new-economy businesses. Thus, the United States has long been an attractive location for businesses wishing to serve the North American market as whole.[1]

Mexico's smaller skilled labor and capital markets and lower per capita income imply that it will continue to attract low-wage production jobs in the manufacturing and services sectors. Mexico has little two-way trade with Canada, but its trade with the United

1 Many investment studies suggest that the size of the market has a significant impact on its ability to attract foreign direct investment. See, for example, Slemrod (1990); Mintz and Tsiopoulos (1997).

States is deepening. Its share of US imports has almost doubled since 1990, and continued growth of this trade is expected as the United States expands its economy in the regions closest to its southern neighbor.

Canada's position in North America provides less profitable opportunity for investments than does that of the United States. Although Canada has an abundance of natural resources relative to population size, its per capita income is lower than in the United States, and its population is a tenth the size. Thus, we offer much smaller markets in terms of consumption, labor, and capital, although we do provide a relatively good pool of skilled labor. Parts of the country, particularly southern Ontario and Quebec, are located near heavily populated parts of the US northeast, but regulatory, tax, and other factors make it easiest for businesses to shift resources around the United States than to cross the Canadian border. On pure economic terms, it is more natural for high-value-added businesses to locate in the larger US market, rather than here.

Given the dominance of the United States in the NAFTA, Canada is the maid of honor, rather than the bride, in attracting firms in today's global economy. But government policy could create a competitive advantage for Canada. For it to become the place for businesses to locate rather than the United States, it needs to think strategically about making itself a center of excellence in the North American economy. Government expenditure and tax policies can play a significant role in achieving this excellence.

The New Economic Order

The Canadian economy is becoming increasingly internationalized — a process that inevitably implies that production here must compete with production elsewhere or, alternatively, depend on foreign demand for Canadian goods. Many firms have become focused on foreign markets. They can shift production and profits from Canada to other countries with greater ease. They can out-source production to foreign entities that they or others own. They can create

alliances with foreign businesses, often enabling the transfer of knowledge, ideas, and technology through contractual relationships, rather than just expanding through mergers and acquisitions or undertaking new investments. Instead of locating processes of production in one place, such as manufacturing all automobile components in one plant, businesses can locate separate lines of production in different countries. Even headquarters functions, such as finance and tax departments, can be shifted far from the official head office where control is nominally placed. A firm headquartered in Montreal may have a vice-president of finance living in Texas. People are also able to hop on airplanes and work in different countries as consultants, salespeople, and agents. Businesses increasingly are competing in global, rather than national, labor markets to find the best managers and skilled personnel.

The most radical change now occurring throughout the industrialized countries is the growth of the Internet and other new technologies, which are creating a new paradigm for business operations. Today, successful businesses, using fast communications technology, can network operations in different parts of the world. The Internet, video conferencing, and other new technologies allow management and workers to communicate from afar without traveling long distances. The new communications and transport technologies are changing the world to one in which firms are organized as global operations, rather than according to locality.

New technologies are bringing remarkable changes in the way firms operate. Complementarities among the inputs to production at a specific location are becoming less important than those of knowledge-based inputs within the firm. In other words, global economic integration is leading to the unbundling of production processes that were once concentrated at a single location. Business profits are now coming from the use of superior knowledge-based resources — human or otherwise — that are within the firm but not tied to a specific location.

Location thus matters to firms today. They locate activities where conditions are most favorable to doing business. The unbundling of production processes erodes the economic advan-

tages of locating several lines of activity at one spot and makes more important the decision about where to locate each. Of course, such unbundling has some constraints, which arise from the costs of moving information, goods, and people within the firm. The key point, however, is that the fall in communications and transportation costs has made it possible to unbundle production processes far more than previously.

The changing world economy — largely a result of transportation and communications technologies that reduce the need for face-to-face interactions — has profound impacts on the process of growth through agglomeration. Although one can point to the importance of clusters of businesses in creating a better climate for growth, the reduction in transportation and communications costs increases the value of diversifying business activities across locations. Thus, a country's future economic growth will very much depend on its advantages compared with those of other jurisdictions, not just its own natural advantages, such as resources and size of the market.

Technology and economic integration can have far-reaching effects on social and political structures. History offers many examples of the importance of technology and economic integration on the development of societies (see Box 1). The process is growing at a dizzy pace. Only a year into the twenty-first century, one can see that the technological development of the past two decades will have a substantial impact on integration at the international level. Economic linkages among countries will strengthen, requiring public institutions to adapt to a more integrated global economy. Public policies that are responses to internationalization of national economies will require governments to make cooperative decisions; the gamut of issues will range from financial regulations to trade in genetically modified agriculture products.

At the same time, governments will need to respond to their culturally distinct electorates, who have their own preferences for certain mixes of private and local public goods and services. People operating in a global world, whose incomes are no longer linked to a specific location, will still look toward their own com-

Box 1: *Technology and Economic Integration — Some History*

Humanity is always developing new technologies to increase the amount of goods and services that can be produced from the available resources. Sometimes the results are far-reaching. For example, a simple innovation adopted in the Battle of Tours (732) — the stirrup — led to profound changes in economic relationships. It converted Frankish armies from groups of mere foot soldiers to mounted men who could throw spears, thrust lances, and wield longer swords with much greater force. But the new technology was expensive. A cavalryman needed income equal to at least 20 oxen (Grapperhaus 1989, 53) to pay for his equipment, an extra horse, and costly animal feed. Only a few landowners could afford such expense. Charles Martel dealt with this financial problem by confiscating ecclesiastical estates and giving them to his mounted soldiers.

By the early ninth century, Charlemagne, who controlled a significant part of Europe, took another step that led to the development of feudal society. He released lower-income freemen from military obligation and ordered them to create groups to cultivate land and jointly finance the mounted soldiers. Eventually, freemen disappeared and Europe became a two-class feudal society of farmers and knights.

Technology also had a substantial impact on the trading fortunes of the great Ottoman Empire. It was at its zenith after it conquered Constantinople (1453). It controlled vast lands in western Asia, northern Africa, and the Balkans. European traders traveled to and from the Far East on its roads. Constantinople itself was home to goldsmiths, painters, tailors, physicians, dyers, silk workers, gold washers, and many other skilled workers of that time (Sachar 1996). However, all this changed dramatically with the development of faster ships to travel between Europe and the Far East. The Ottoman

munity to provide a high quality of life for themselves and their families. Therefore, to the extent that people care about the quality of services they receive, including roads, police protection, and education, they will favor the structure of government most responsive to their demands, usually in the closest level of government.

Box 1 – continued

Empire lost the profits from its custom stations, many of which were now bypassed. The result was economic decline in the late sixteenth century.

Perhaps the most outstanding example of how technological change resulted in significant economic integration internationally is the profound changes in Europe's transportation and communications networks in the latter part of the eighteenth and first half of the nineteenth centuries. Although these technologies were not close to being as speedy as today, they were much faster than those of earlier centuries. Improvements in roads and horse-drawn vehicles and the invention of the railroad and steamship made traveling between large cities by rail or water much faster than between the small rural areas where most Europeans still resided. The improved transportation and communications technologies resulted in the decline of the quasi-feudal estate (Hobsbawm 1962, 29; Briggs 1999) owned by rich, sometimes absentee landlords but lived on by serfs in eastern Europe, nominally free peasants in central Europe, and slaves in the colonies. Populations were increasingly drawn to larger cities, where the new technologies of the Industrial Revolution led to concentrations of businesses that could manufacture at low cost with raw materials obtained from far-away lands.

All this eventually led to the decline of feudalism. Hereditary monarchs traditionally had received support from landed nobles and churches, who controlled the rural areas. With the shift of production to urban areas, monarchs needed political support from the new industrialist and educated classes. In the late eighteenth century, monarchists began to develop programs of enlightenment that would provide new freedoms to the new classes but could not break away from the entrenched hereditary classes. Eventually, the end of feudal society led to new forms of government, including democracy.

Economic Growth and Location

In the simplest model, economic growth arises from the improved use of labor and capital and from innovations in technology to produce goods and services sold to markets. From those sales, people derive their personal incomes: wages and salaries as compensation

for their work effort, and interest, dividends, and capital gains as a return on their capital. The original neoclassical theories suggested that economies grow at a rate determined by given rates of growth in population and productivity. In recent years, however, new theories of growth stress that productivity gains depend on decisions made by people: specifically, the accumulation of *human capital* — the stock of knowledge and skills acquired by workers — and the incentive to innovate. These endogenous growth models help to explain why per capita growth rates differ substantially across countries (see, for example, Romer 1990; Krugman 1991; Lipsey 2000). Thus, contemporary countries may operate at sharply different stages of economic development.

Growth depends on more than just knowledge and skills. It also depends on how well an economy uses its resources, a factor related to the dynamics of competitive behavior among firms. Every industry has "star" and "dog" companies, some that are very successful and others that go bankrupt. So does every decade: consider automobiles in the early twentieth century and computers in the later years. Growth in the economy depends significantly on competitive entrepreneurs' seeking profitable opportunities. Such entrepreneurial spirit is difficult to predict for any specific time.[2]

Agglomeration

Differences in growth rates also result from the process of *agglomeration* — individuals and firms that locate geographically close to each other, accruing joint benefits that exponentially increase economic activity in the area. In the absence of any particular gains from agglomeration at a particular location, people and businesses move so that the population is evenly distributed across geographical space. However, if some location has specific advantages, such as access to water and natural resources, or relatively high incomes,

2 See Harberger (1998), who argues that the process of competition among businesses helps to create an environment that leads to economic growth.

individuals and firms gather more densely there. This movement of people and businesses to a location stops when congestion (for example, pollution or the length of time to travel) and other costs (such as land rents) offset the benefits of being there rather than elsewhere.

At the global and to some extent the national level, businesses are much more mobile than people since individuals tend to become attached to their home location for cultural, family, or regulatory reasons (visa requirements are an example of the latter).[3] Thus, agglomeration is more related to business mobility than to individual mobility. Firms can be attracted to a location not only because of its specific advantages but also because of the spillovers arising from the greater density of people. Businesses located near large populations can reduce per unit transportation costs incurred to service the market (Krugman 1991). Further, if the area offers a large pool of heterogeneous labor, there are more efficient prospects of matching employment with the supply of workers according to skill levels. Businesses are also able to share ideas when they locate close to each other; for example, two high-technology workers may discuss computer-related issues at the local bar. Several studies show that the agglomeration effects arising from heterogeneously skilled populations in urban areas are important in explaining differences in regional incomes.[4]

Canadians are quite conscious of the importance of agglomeration in explaining growth. For example, the discovery of oil in Leduc, Alberta, just after World War II, led to an economic takeoff in that province as many companies began exploring and discovering new pools of oil and gas; soon other businesses, not all directly related to oil and gas production, came to Alberta to service the

3 Studies show significant interprovincial mobility among Canadians except francophones, who are more likely to remain in Quebec (Day and Winer 1994). Although people move between countries, such migration is usually not significant (see Helliwell 2000).

4 See Quigley (1999), who states that doubling the population size of an urban area results in a productivity gain of 3 to 27 percent.

new sector as the population expanded. Kanata, Ontario, has become a major Canadian center for high-technology companies, largely created by the availability of research and development (R&D) grants provided by the federal government in the 1970s.

Such growth results in a rapid expansion of economic activity as new firms locate near others to take advantage of the diversity that has been created. Only when congestion costs and shortages of skilled labor become sufficiently large does the process stop. At that point, the economy cannot expand beyond what it is able to provide through normal productivity gains.

A key implication here is that people living in regions with heterogeneous labor markets that benefit from agglomeration effects tend to have larger per capita incomes than those who live in less dense areas. Although this result might suggest that efficiencies in a knowledge-based economy are greatest if firms are in one place, congestion and other costs (shortages in skilled labor and higher land rents) eventually make it difficult for all businesses to gather in a single location. They then spread out to the extent that the agglomeration gains are less than the congestion costs.

Lower Communications and Transportation Costs

While the roles of human capital, innovation, and agglomeration are recognized as important determinants of economic growth, lower communications and transportation costs are becoming important. Rapidly developing new technologies are making it easier for people to communicate electronically than to meet face-to-face. Moreover, new technologies are substantially pushing down transportation costs, allowing for more business travel as well as increased trade as firms have greater access to world markets.

What does this all mean for the prospects for a country's economic growth? Two somewhat contradictory trends arise. The first is that reduced communications and transportation costs increase the gains to agglomeration since firms can serve not just local but also world markets by shipping goods from the chosen location.

Thus, leaving aside all other factors, businesses are tending to locate in countries where the benefits from agglomeration (including the quality of the workforce) net of the costs of production — wages and land rents — are largest. But falling transportation and communications costs make it less expensive to supply products and services from low-cost jurisdictions that are further away from markets. Increased competition from other localities reduces the gains from agglomeration for a specific location. Agglomeration remains important, but the benefits that businesses derive from locating close to each other are reduced in economic value. If a firm prices products far too high relative to those produced in other jurisdictions or if workers demand wages much greater than those paid in other localities, parts of the production process can be easily moved elsewhere without significantly affecting its efficiency.

Thus, the second trend is that lower communications and transportation costs are making it easier to diversify production across locations to take advantage of new technologies.[5] Just as businesses have adopted technologies that have resulted in smaller plant sizes, so they have been obtaining new technologies to improve their acquisition of knowledge at the worldwide level.[6] With new communications technologies, firms have access to pools of knowledge available in other regions, rather than being limited to a specific geographical area. This outreach reduces the advantages of locating in a specific region and favors developing technologies and processes that allow for trade in knowledge among or within firms. Thus, for example, a substantial growth of business alliances is a consequence of firms' relating to each other to access the technologies they can share (see, for example, Baum, Calabrese, and Silverman 1999, regarding the biotechnology industry).

For firms to talk to each other and share results, however, they must be in a position — with the right management and skilled

5 Diversification also offers are other gains, such as reducing risks.

6 See Coe and Helpman (1995), who estimate the importance of technological spillovers across countries. Canada is a significant beneficiary of technology developed elsewhere.

workers — to acquire the knowledge. All in all, there are two approaches. Firms can undertake investments to locate in large, expensive areas in order to acquire knowledge. Or they can invest in technologies that facilitate the use of knowledge without relying on location. Falling communication and transportation costs are increasing the incentives to rely less on location-specific investment to acquire knowledge. An implication of the trade in knowledge is the reduction of agglomeration effects and inequality of incomes across regions.

Summary

Overall, as the world becomes increasingly integrated through lower communications and transportation costs, the payoffs to agglomeration at specific locations may be smaller if the gains to diversification across locations are sufficiently large. Manufacturing provides a good example of how transportation technologies have transformed the process of production over time (see Glaeser 1998). At one time, manufacturers such as General Motors located most of their production facilities in Michigan or a few other places in the United States and Canada, primarily near large urban areas. Operating in these heavily populated industrial areas, where growth was in part generated by the industry itself, offered significant advantages. The most important was the substantial reduction in per unit costs of production realized by locating close to the large market. *Economies of scale* (where per unit costs fall with increased production) were facilitated by the greater demand generated from the savings in transportation costs realized by locating near the population. In fact, during the early part of the twentieth century, industry increasingly concentrated in large urban areas. (See Aedes and Glaeser 1995; Kim 1995.)[7]

With the sharp decline in transportation costs during the latter part of the twentieth century, manufacturers began to find it unnec-

7 Glaeser (1998) reports that in 1950 seven of eight US cities had a workforce in manufacturing greater than the country's average.

essary to locate close to large urban markets. New technologies allowed for customized production and smaller plants, and it became cheaper for manufacturers to move production facilities to other locations. Large urban centers began shedding manufacturing employment in favor of services. By 1990, manufacturing provided less than 14 percent of employment in large cities and about 18 percent of total US employees were engaged in it (Glaeser 1998).

The Cost of Doing Business

The key feature of this monograph is an examination of the impact of public program expenditures and taxes on the cost of doing business for different sectors in Canada and the United States. Why do I focus on the cost of doing business as a way of measuring the impact of public policy on a country's potential for earning income and improving prospects for economic growth? The cost of doing business is central to understanding how public policies can affect an economy's standard of living. A country's comparative advantage in trade is largely determined by the cost of doing business there. Improvements in its productivity allow it to produce the same amount of goods and services at lower costs.

Clearly, Canada's competitiveness in international markets depends on our comparative advantage and productivity — in other words, on the cost of doing business.

Comparative Advantage

As is well known from economic theories of trade going back to David Ricardo in the nineteenth century, a key to the economic success of a country is for entrepreneurs to specialize in the production of those goods and services in which they have a comparative advantage. If one assumes that only goods and services are traded internationally and the factors of production (labor and capital) are immobile, then free trade maximizes an economy's gains since production specializes in the products that are relatively cheap to produce at home. ("Relative" is the operative word here — see Box 2.)

Box 2: *The Advantage of Comparative Advantage*

Trade arises when countries have comparative advantage. To understand why, consider the following example.

Suppose that costs of production for all products are much higher in the United States than in Canada; given competitive markets, the US prices of goods sold in the United States are twice the Canadian prices of goods sold in Canada. With a floating exchange rate, the value of the US dollar in terms of the Canadian dollar reflects, over time, the differences in the average cost (price) levels.* For example, suppose it costs US$2 to produce, on average, all traded goods in the United States and C$1 to produce the same bundle of goods in Canada. In this case, the exchange rate for the Canadian dollar — the number of US dollars that can be bought for one Canadian dollar — is US$2 for each Canadian dollar to balance trade. If the exchange rate were lower, Canadian producers could sell their products in the United States for less than US$2, taking away the market from US producers. Similarly, if one Canadian dollar bought more than US$2, Canadian goods sold in the US market would be too expensive and both Americans and Canadians would buy only US goods. Thus, the value of the exchange rate reflects the average difference in cost (price) levels between the two countries. If relative costs rise in Canada, its dollar will depreciate (each Canadian dollar will buy fewer US dollars).

Differences in the absolute level of costs between countries have no impact on their economies since the exchange rate adjusts fully.

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* This example uses purchasing power parity to explain of the long-run value of exchange rates. Macroeconomic studies of exchange rates for the Canadian dollar expressed in US dollars also suggest the influence of other factors, such as interest rate differentials, resource prices, and government debt (see Laidler and Aba 2000).

A key point is that the absolute or average cost of producing goods and services is not the determinant of trade. If a country reduces the average costs of producing all goods, it can create a temporary advantage for itself in markets, but traders then see this rise and, with a freely floating exchange rate, bid up the country's currency in world markets. Thus, a reduction of average costs simply causes a rise in the exchange rate (the price of one country's

Box 2 – continued

Furthermore, if all goods and services produced in Canada sell at prices in exactly the same ratio as US prices, trade offers no economic benefits. Trade arises only when one country produces a product more cheaply than another country. Thus, suppose Canadian producers face costs of C$5 per barrel of apples and C$20 per barrel of oil, while US producers face costs of US$8 per barrel of apples and US$80 of oil. If the exchange rate is US$2 for each C$1, the production cost of Canadian oil is US$40 per barrel in Canada and US$80 in the United States. The price of a barrel of Canadian apples is US$16 and that of a barrel of US apples is US$8. Thus, Canadian oil is clearly competitive compared with US oil, and US apple production is more competitive than Canadian apple production.

If Canadians produce more apples and less oil (keeping the cost of resources constant), they can produce only four additional barrels of apples for one less barrel of oil. But if Americans increase apple production for less oil, they can produce ten barrels of apples for each unit of oil they give up. Clearly, both countries can gain if they trade apples and oil. Canada can produce one more unit of oil, giving up four barrels of apples. The United States can produce five barrels of apples, giving up a half unit of oil. For both countries in total, apple production can rise by one barrel and oil production can rise by half a barrel if the United States specializes in the production of apples and Canada in the production of oil. Both countries are better off.

Comparative advantage applies to all products sold by countries, including agricultural goods such as wheat and barley, machines, and consultant services. Countries will export those goods and services in which they have a comparative advantage and import those in which they do not.

currency stated in terms of another's), and there is no change in amount of trade.

Instead, trade occurs because there are cost advantages to producing a good in one country rather than another. For example, if a country is more cost-efficient than others in producing computers relative to canola, then it specializes in the export of computers. These computers are traded for canola from other countries that

have greater cost-efficiency in producing it. Ultimately, both countries gain from trade through specialization.

The important lesson of comparative advantage is that countries should specialize in those goods in which they are most productive — in other words, those that are relatively cheap to produce within their borders. This lesson is hard for countries to follow. For example, less-competitive forest producers in the United States, with their relatively high cost of production, may try to block Canadian timber exports while high-cost Canadian fruit producers may try to prevent US fruit imports. But both countries can be worse off as a result. Thus, the cost of doing business (adjusted for the exchange rate) is an important indicator of which goods are best to produce in each country.

Moreover, if countries try to interfere with the process of free trade, they can also lower the incomes their people earn. For example, cucumber production in Newfoundland proved quite expensive. So, to be competitive with their counterparts in other provinces or countries, Newfoundland cucumber producers needed substantial government subsidies, which had to be funded by taxes on other business activities or on citizens themselves, thereby making other sectors of the economy worse off. (Indeed, the subsidized business eventually failed, leaving all provincial residents worse off.) Thus, Newfoundlanders probably should not have been investing large resources in the cucumber industry; instead, they should rely on imported cucumbers and invest resources in industries that are more competitive with foreign producers.

In brief, comparative advantage and productivity are closely related. Public policies that do not interfere with our comparative advantage to trade in international markets can achieve greater incomes for Canadians.

Productivity

The cost of doing business is also related to the notion of *productivity*, which is the amount of goods and services produced with a

given amount of labor and other inputs. The Canadian population derives its income from the sale of goods and services. Thus, one measure of productivity is to calculate the value of Canadian production in relation to the population or the hours they worked.[8]

Productivity can also be calculated in the dynamic terms of economic growth: how much more product can be produced from given labor and capital inputs? The improvement in the use of resources may come from innovations or from greater efficiency; both can lead to a better use of resources to produce goods and services. Increases in productivity indicate how Canadian income per capita may grow when labor, capital, and other business inputs are used more efficiently in production.

Both notions of productivity can be related to the cost of doing business. One measure of productivity — income per employee hour worked — is simply the value of production divided by a measure of resources, such as hours worked. This measure is just the flip side of the cost of doing business, which equals the cost of using resources as a proportion of the value of production. If Canadian producers are more productive than US producers, the cost of doing business in Canada is lower than that in the United States. If the average producer in the economy is relatively efficient, the Canadian dollar appreciates to reflect this better productivity.

Growth in the output per unit of resources used in production also lowers the cost of doing business, which makes the country's producers more competitive. One result is a rise in the exchange rate but this appreciation is a good thing for a country. A higher exchange rate signals better economic use of resources so that Canadians can afford to buy more foreign goods and services with the dollars that they have. It is a sign of a higher standard of living.

None of the above suggests that the exchange rate *itself* affects productivity. Some people argue that a low value for the Canadian dollar protects our export industries from competition. The rea-

8 Output per employee hour is the better measure of how much Canadians produce with their effort. Another measure is total factor productivity, which is the output produced from the use of labor, capital, and other inputs.

soning is that a low exchange rate obviates the need to react to international competitive forces that would otherwise create an incentive to put best-practice technologies in place. This argument is fallacious on two grounds. First, competitive forces within a country can be as important as international competition. Second, the exchange rate itself depends on productivity factors, rather than the converse. Greater productivity leads to lower costs of production and therefore a higher exchange rate. Thus, a low exchange rate is a symptom, not the cause of the disease — poor productivity.

Competitiveness

Generally, competitiveness is a much criticized and misunderstood concept. Some people argue that a country achieves competitiveness by making its cost of doing business lower than that of other countries. Its exchange rate then adjusts upward to achieve a balance in trade, as suggested above. But an increase in the exchange rate can, therefore, wipe out the gains to having a lower cost of doing business. On the other hand, a higher exchange rate is, as stated above, a good thing since it means that Canadians' incomes are higher in terms of the ability to purchase goods and services from abroad.

Competitiveness is also viewed as a country's having a positive balance of trade. In fact, one might think that a country should have a positive balance of trade in each and every product. Yet this outcome is clearly impossible since the exchange rate must balance trade at the point where the value of exports equals the value of imports. The lesson of comparative advantage is that traders are bound to export those products that relatively cheaper to produce within the country and import those that are relatively more expensive to produce.

Where competitiveness can have a special meaning is in relation to *intrafirm trade* (trade within a multinational company). Almost half of Canada's merchandise trade with the United States is intrafirm trade, including the transactions of major industries

such as oil and gas in Alberta, automobile manufacturing in Ontario and Quebec, and mining and forestry in British Columbia and the Atlantic provinces (see Eden 1998, 196). In a world dominated by multinational companies with worldwide production processes, the implications of competitiveness through a lower cost of doing business for a country such as Canada differ greatly from those situations in which all firms operate domestically and simply have trading relations with independent foreign producers. When a multinational company operates in several locations, rather than just one, it is in a position to make better use of internal resources, diversify risks, and improve productivity.[9]

One view is that business activities carried on by multinationals in a number of countries may be close substitutes for each other (Feldstein 1995). Thus, if Canada improves its competitiveness, the multinational reduces production in foreign countries and increases production here. On the other hand, to the extent complementarities exist in business activities across jurisdictions within multinationals (Lipsey 1995), a reduction in the cost of doing business in Canada increases the competitiveness of activities in this country and of related multinational activities in foreign jurisdictions. Complementarity of business activity within the multinational firm is often the dominant case. Multinationals export or import intermediate goods and services to and from affiliates.[10] Intangibles related to R&D or managerial services are commonly traded within the multinational to achieve efficiencies.

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9 This concept is closely akin to the notion of economies of scope, which implies it is cheaper for a firm to produce several products rather than for independent firms to produce the same products separately. The economies of scope argument rests on the observation that some factors of production — entrepeneurship, innovations, marketing, and capital — are common to several production processes and can, therefore, reduce the cost of production of several goods produced by the firm.

10 For example, in the seventeenth and eighteenth centuries, supplies of cotton from colonies were imported into Britain as an intermediate product to produce a final product, textiles, that was, in part, exported back to the colonies. Today, intermediate goods can be sent from the United States to Mexico, reassembled, and imported back to the United States.

The implication of multinational intrafirm trade is that significant cross-jurisdictional spillovers arise within the firm from productivity enhancements in one country that improve the productivity of the multinational's operations elsewhere. Spillovers of R&D are especially important to Canada, which receives substantial benefits from the transfer of technology from the foreign parent to the subsidiary that lowers the cost of doing business in Canada (Coe and Helpman 1995). It is important to evaluate these cross-country spillovers in considering public policies. If they allow greater access to technology transferred from other countries, Canadians can be better off in terms of earning higher incomes. Thus, openness of the Canadian economy to international trade can facilitate greater growth.

The Role of Government in Creating the Canadian Advantage

The challenge for Canadians is to reconsider the role of government in light of the internationalization of the Canadian economy. Traditionally, the role of government in economic development has been seen as providing public services — including defense, policing, roads, highways, education, and health care — and redistributing income through social policies. Taxes are levied to finance these services but typically are designed with distributional objectives in mind. The traditional argument thus favors *progressive taxes* — the wealthier members of society are assessed at a higher rate than poorer members — and the best tax is one levied on income. But much of this framework for understanding public finance largely ignores the constraints imposed on government arising from the openness of the economy to international flows of goods and services. Formerly, analysts perceived these constraints as relatively unimportant; although they might have some influence on policies — such as exchange rates or the taxation of capital — governments were fairly free to pursue public initiatives and redistribute income through transfers at a low economic cost.

Today, however, ignoring global economic integration is foolish. Even though borders still matter, countries are becoming more integrated in goods and capital markets. As to be discussed in more detail in Chapter 3, capital, management, and technology are increasingly mobile.[11] Thus, public spending and taxes can have a bigger impact on the location of business activity and jobs in Canada and other industrialized countries than they did in the past. The economic costs of inefficient public expenditure programs and distortionary taxation are greater now than they were just 20 years ago. The reason is that business activities are more mobile today and will be increasingly mobile in the future. The rapid change now occurring in electronic technology will only increase the degree to which firms will operate in many countries. We are only at the cusp of the revolutionary changes.

Given that Canada's economy is now more integrated with the rest of world, including our neighbor to the south, we must be sensitive to these changes. If we undertake policies that ignore this reality, we may find that we are not able to achieve our economic and social objectives except at an unfortunately heavy economic cost. In other words, we should pursue policies that achieve the objectives that we want as Canadians — a high quality of life and rising incomes and greater employment opportunities — keeping in mind the constraints that arise from the internationalization of our country's economy. The challenge facing government today is to develop a set of policies that can create a strategic advantage for Canadians.

11 Not all types of capital are mobile. Once in place, structures affixed to land cannot move. But equipment and inventories can travel across national boundaries.

3 Policy and Canada's Economic Performance

The previous chapter stressed the importance of the location decision for businesses today. As economies are becoming increasingly integrated internationally, capital and jobs are growing more mobile across borders. The decision to locate production in a country depends on several important factors, including the size of its market, the quality of its labor force, its infrastructure, and the availability of natural resources. Government, which plays a large role in the economy, can help to create an advantage for a country. In the presence of greater economic integration with other parts of the world, public expenditure and tax policies can affect Canada's economic performance through comparative advantage, productivity, and competitiveness. Thus, this chapter asks several questions:

- How has the Canadian economy performed recently in terms of per capita income growth, employment, and income inequality? How does this performance compare with that of our most important trading partner, the United States?
- Is the Canadian economy becoming more open in trade and factor flows and therefore more integrated with the rest of the world? Does public policy inhibit or encourage such integration?

- Given Canada's economic performance and integration with the rest of the world, have its governments made fiscal decisions in recent decades that would enhance the country's prospects for growth? How does their performance compare with that of US governments during the same period?

Canada's Economic Performance

The 1990s were not kind to Canadians. The decade was a period of the lowest economic growth since the depression years. The recession of the early 1990s resulted in a sharp increase in unemployment and depressed incomes. Many older workers took early retirement as businesses retrenched to save on costs and young people had trouble finding jobs, even at minimum wages. An increasing number of workers became self-employed as firms concentrated on core activities and relied more on contracting-out services to small businesses.

Even the federal and provincial governments had to tighten their belts. As a result of fiscal mismanagement, their debt as a percentage of gross domestic product (GDP) was almost 110 percent[1] by the mid-1990s. Interest expense on total public debt consumed almost 25 percent of revenues raised by all governments. Despite retrenchment, total government revenues rose from 40 percent of GDP in 1989 to 43 percent in 1998.[2] Canadians paid about $1.30 for each dollar of program spending in 1998, the balance being used to cover public debt charges. Governments also had to constrain expenditures, even in the politically sensitive areas of health care and education.

All this retrenchment occurred during a time of slow economic growth. Per capita income, gross of tax payments and excluding government transfers, rose very little on an inflation-adjusted basis throughout the 1990s. Real *per capita disposable income* — per capita

1 Calculated on a Public Accounts basis (Canada 1999a).

2 Calculated on a National Accounts basis (ibid).

income net of taxes and including government transfers — actually fell during the 1990s by over $500 per person.[3]

Moreover, Canada's economic growth substantially lagged behind that of the United States. In 1989, a family of four in Canada had disposable income of about $15,500 less than a similar family in the United States (using 1998 values[4]), but by 1998 the difference grew to almost $31,000. Figures 1 and 2 (all figures in this chapter are at the end of the chapter) provide historical comparisons of incomes in the United States and Canada.

Lagging economic growth in Canada was accompanied by a growing divergence in Canadian and US unemployment rates. In 1989, the rate in Canada was 7.5 percent; it increased to 11.3 percent by 1992 but fell to 8.3 percent in 1998. In contrast, the US unemployment rate was 5.3 percent in 1989; it increased to 7.5 percent in 1992 and decreased to 4.5 percent in 1998. In brief, in 1998, the US unemployment rate was below its 1989 level while Canada's rate remained higher than it had been a decade before, and the gap between the two countries increased from 2.2 percentage points in 1989 to 3.8 points in 1998. This experience of the unemployment rate diverging between Canada and the United States is not new. As shown in Figure 3, it is a phenomenon of most of the past years.

Although per capita incomes have generally been lower in Canada than in the United States, average earnings display wide variation across industries. As illustrated in Figure 4, the averages in Canada were higher than those in the United States in some industries, such as forestry, construction, transportation and storage, retail, and business services, but lagged significantly in manu-

3 All dollar amounts in this chapter are in Canadian currency unless otherwise noted.

4 The calculations for the numbers reported in this chapter and its figures are based on the 1998 US-Canadian exchange rate reflecting purchasing power parity (PPP), thereby correcting for cost of living differences between the two countries. Thus, for example, instead of using the actual exchange rate of 0.67 cents (the US amount one Canadian dollar could buy), I used a higher exchange rate to reflect the lower cost of living in Canada. Clearly, the measured difference in per capita incomes would be much greater if I had used the actual exchange rate.

facturing, communications, utilities, and wholesale. The explanation of such wide differences includes several factors, such as productivity and unionization, that go beyond the focus of this monograph. Notice, however, that the most significant divergence has been in the communications industry — largely telecommunications (the remainder is postal services) — which is critical for the development of new technology and productivity increases in both countries. Clearly, Canadian firms in this sector have been paying lower wages than have US firms. In fact, between 1988 and 1997, salary levels increased at a far lower pace in Canada than in the United States, as seen in Figure 5. This observation is consistent with Schwanen (2000), who notes that high-technology firms in Canada tend to employ more production workers, as opposed to non-production workers (the latter include scientists, engineers, and managers), compared with firms in the United States. The implication is that Canadian communications firms are operating at a lower part of the value-added chain than US companies.

All this is not a pretty picture. However, the next decade may be much better. Until very recently, at least, business profitability had been improving. Unemployment rates are falling. Wages are keeping pace with inflation. Most governments have balanced their books and now have surpluses to spend on providing public goods and services, retiring debt, or cutting taxes. Personal disposable income per capita has recently been increasing in Canada almost as fast as in the United States.

Yet, the critical question is not whether the country will grow more quickly than in the past. Instead, it is whether our economy will grow sufficiently fast to at least reduce the gap with the United States and other trading partners to levels found in earlier years. Or, even with better growth, will we find that we are falling further behind? A widening gap in personal incomes between Canada and its trading partners would make it more difficult to attract and keep mobile entrepreneurs and businesses, who might prefer to move production to markets that provided greater opportunities. The Canadian dollar would decline relative to the US and other currencies, making our export industries more competitive at the

cost of more expensive imports and a lower standard of living. With a living standard falling relative to that of other countries, we would be competing with low-wage economies, rather than the more vibrant economies that provide high incomes for workers as a result of better productivity.

On the other hand, closing the gap with faster economic growth would result in higher incomes for Canadians. Expenditures on goods and services, including public services, would be more affordable. The Canadian dollar would rise in value, improving our standard of living relative to that of the rest of world. Canadians would end up debating the negative consequences of surging economic growth, such as congestion on highways and rising housing prices, rather than the economic costs associated with high unemployment and low productivity.

Despite the prospects for much better growth in the near future, potential roadblocks stand ahead. One of these — the main subject of this monograph — is the challenge arising from the increased mobility of business inputs in the world economy. If Canada is not competitive, it will lose production and employment to other countries. On the other hand, a competitive economy will enhance opportunities for economic growth and result in higher incomes. This is the great challenge and opportunity for all Canadians in a world with greater mobility of business inputs. It will also be a great challenge and opportunity for Canadian governments since they play a significant role in our economy.

Growth and Inequality

If Canada's economic growth speeds up, would some people be left behind, leading to greater inequality in incomes? This question is critical since Canadians are concerned not just about growth but also about protecting families from poverty.

The argument that growth leads to inequality is based on several hypotheses, three of the most important being the following.[5]

5 For a comprehensive review of issues of growth and inequality, see Aghion, Caroli, and García-Peñalosa (1999).

- The adoption of most new technologies, including information technology, tends to favor the demand for highly paid skilled labor. Skilled labor is complementary to the use of technology, and when technological change leads to a growing economy, the incomes of suitably skilled workers are bid up significantly. The demand for unskilled workers is less favored, even though general growth in the economy leads to a demand for their services. Thus, technological change that favors skills-intensive labor leads to greater economic inequality.
- Greater economic integration at the international level improves economic growth prospects, as economies are able to reap economic gains from increased trade, including the transfer of technology from abroad. However, economic integration also encourages countries to specialize in the production of goods and services that rely on their most abundant factors. Industrial economies end up specializing in skills-intensive goods while developing economies focus on less-skills-intensive production. With falling barriers to trade, businesses therefore shift low-cost production to low-wage economies. Thus, forces of globalization result in greater economic inequality in industrialized economies as the demand for low-skilled workers declines relative to that for skilled labor, whose wages adjust upwards.
- Intermediate goods, such as forest and mineral products and manufacturing goods, may complement skilled labor and substitute for unskilled labor. If increased economic integration results in greater competition for intermediate goods, their prices fall in international markets. Any resulting decrease in the demand for unskilled workers relative to that for skilled workers leads to greater inequality in an industrial economy.

Although these arguments imply that economic growth will result in greater economic inequality, counteracting forces suggest otherwise. First, greater growth may simply reduce unemployment rates and, therefore, income inequality. Second, increased wages for skilled labor encourage individuals to invest in education. Thus, rising wages should increase the supply of human capital so

that the number of unskilled workers in the economy declines. Moreover, increased demand for skilled labor could also result in greater demand for some unskilled workers, and the decline in their relative numbers would bid up their wages, resulting in overall increased per capita incomes with little change in inequality.

Third, governments play an active role in redistributing income from the rich to the poor. Economic growth, resulting in higher incomes, also means proportionately more taxes (due to the progressivity of the tax system) and more transfers paid to support the poor. To put the point another way, a rich country is in a better position to support social programs than a poor country. Further, governments can, through education policies, increase the supply of skilled workers, reducing the premium that skilled wages have over unskilled wages (see, for example, Murphy, Ridell, and Romer 1998). Growth can, therefore, reduce inequality, rather than increase it.

Which Way Does Causation Run?

The previous paragraphs assume that economic growth affects income equality. Some recent studies suggest that income inequality itself may result in less growth (Aghion, Caroli, and Garcia-Peñalosa (1999). As a result of the inability to borrow money to fund microinvestments or education, lower-income individuals have insufficient resources to make investments that could provide high returns. Thus, goes the theory, policies that decrease inequality by providing more resources to the poor can improve economic growth rates in the economy.

A counterargument is that the provision of public support may deter individuals from seeking high-return activities if it encourages recipients to invest in poor economic activities or not all. Further, to pay for the support, taxes are assessed on upper-income individuals who may, therefore, work or invest less. In this case, a reduction in inequality may cause less economic growth.

To sort out whether economic growth is related to greater or less inequality or vice versa, Table 1 displays the short-run rela-

Table 1: *Average Income and Inequality, Canada, 1972–97*

	Average Income before Tax and Transfers[a]		Average Income after Tax and Transfers[b]	
	Annual Growth Rate	Gini Coefficient[c]	Annual Growth Rate	Gini Coefficient[c]
	(%)		(%)	
1972–77	2.38	0.448	2.94	0.367
1978–84	-0.36	0.452	-0.19	0.358
1985–91	0.35	0.470	-0.04	0.356
1992–97	-0.09	0.495	-0.23	0.358
Correlation of annual average income and Gini coeffcient	0.01		-0.64	

Causality Test (Granger), F-test values

	Gini Coefficient on Income after Tax[d]	Income after Tax on Gini Coefficient[d]
One lag	22.9*	7.1*
Two lags	22.4*	11.7*
Three lags	14.3*	8.3*
Four lags	27.3*	4.8

[a] All units.

[b] Average money income minus average income tax payable, all units. Income tax is the sum of federal and provincial income taxes payable on income.

[c] The Gini coefficient provides a measure of inequality according to income and proportion of the population in an income class. A higher Gini coefficient indicates greater inequality.

[d] Asterisks denote significance at the 1 percent confidence level.

Sources: Statistics Canada various years, cat. 12-210 XBP; author's calculations.

tionship[6] between money income levels and measures of money income inequality for individuals and families in Canada. For the past thirty years, average Canadian income has increased, although it declined somewhat in the 1978–84 and 1992–97 periods. Inequal-

6 It would be better to look at the relationship between growth and inequality on a long-term basis. However, many observers remark on the growing inequality and the tradeoff with growth in the past decade. The empirical work described above provides some documentation of the Canadian experience in comparison with that of the United States.

ity based on pre-tax income (before the deduction of taxes and the reception of money transfers from government) has increased over time, with the largest rise in the 1992–97 period. On the other hand, inequality measured by *income* (net of taxes and including money transfers)[7] has remained virtually unchanged, although it rose slightly during the 1992–97 period over the years 1985 to 1991. This experience can be contrasted with that of the United States, where the past two decades saw substantial rises both in incomes, on a pre-tax and after-tax basis, and in inequality.

The year-by-year numbers show no significant relationship between growth and inequality of income measured on a pre-tax basis. However, there is a significant negative short-run relationship between inequality and average Canadian income measured on an after-tax basis. The implication is that economic growth is related to a decline in after-tax income inequality. The experience of the last period shown in Table 1 is particularly relevant. Falling per capita incomes, adjusted for inflation, and a small increase in after-tax inequality, yield a *negative* relationship between growth and inequality. What is quite striking, therefore, is that inequality on a pre-tax basis has risen in Canada in recent years with negative economic growth in per capita incomes.

What Can We Conclude?

The previous paragraphs suggest that the tax/transfer system in Canada has had a substantial impact on reducing inequality. Does this mean that growth and inequality offer a tradeoff? Is it simply a matter of Canadians' sacrificing some growth to reduce inequality of incomes through best-practice social policies?

The lesson of the 1990s is that slow growth can make it difficult for governments to pursue social policies during hard times. Even

7 Increases in incomes can affect the measurement of inequality through "collector effects" whereby greater numbers of individuals added to higher income classes resulting from growth may cause inequality measures to rise or fall (see Petersen 1979).

if a tradeoff between inequality and growth exists — a situation proven neither by theory nor fact — that relationship may not be the central issue. What may be more important is whether we are following best-practice social policies that enable us to reach the greatest potential combination of rising incomes and reductions in inequality. As discussed later in Chapter 5, it is far from clear that Canada has designed its social policies to maximize opportunities for growth and for the reduction of inequality. If current social policies can be improved, we can increase growth and reduce the inequality of outcomes for Canadians.

How Much Is the Canadian Economy Integrating?

To what extent is the Canadian economy integrating with the rest of the world? Integration can be measured along three dimensions: the trade of goods and services, capital outflows and inflows, and the migration of people.

Trade

Between 1978 and 1997, Canadian exports[8] to the rest of the world surged from about 25 percent of GDP to almost 40 percent (Figure 6). A significant factor underlying this growth was trade with the United States, to which Canadian exports rose to more than 30 percent of GDP in 1997, compared with 17 percent in 1978. Trade with Europe, however, has been roughly 3.0 percent of GDP, with little change over the past years. Trade in goods with the United States was about ten times more than trade in services in 1997. For Europe the ratio was about three times. The proportion of our trade in goods exported to the United States is over 80 percent of total

8 Although I concentrate on exports, Canadian imports also rose substantially during this period. In 1998, exports plus imports as a percentage of GDP were 81.7 percent while in 1971 the total was only 41 percent (OECD 1999).

Canadian exports, while the proportion of services that goes south of the border is less than 60 percent of total exported services. Thus, our integration with the United States is primarily reflected in our trade of tangible goods while our trade in services is more international in nature.

In brief, Canada is integrating with regard to trade, but primarily on a regional rather than an international basis, especially in goods and less in services.

The growth in trade in goods and services is reflected in cross-border technology transfers. In the early 1980s, Canadian businesses were net importers of technology in that technological payments were greater than receipts. This reversed by 1990, when Canada became a net exporter of technology.[9] Between 1981 and 1995, its receipts of *technological payments* (royalties and fees paid for the use of technology) increased by almost a factor of ten while its own technological payments rose by a factor of less than three (see Figure 7). Overall, imports and exports of technology are increasing in importance for the Canadian economy, another sign of greater integration with the rest of the world.

Capital

Capital flows, as reflected by changes in the ownership of assets and liabilities, have also been increasing over time (Figure 8). The stock of inbound investment to total domestic Canadian assets rose from 8 percent in 1978 to over 10 percent in 1997, and the stock of outbound investment by Canadians to total Canadian-owned assets almost doubled from 4 percent to almost 7 percent in the same period. Since 1995, the flow of outbound investment has generally exceeded the flow of inbound investment.[10] Thus, Canadians are

9 In the 1990s, Canada joined the United States, Japan, and the United Kingdom as a net exporter of technology. Italy, Germany and France are net importers.

10 Canada's share of inward foreign direct investment stock in North America declined from 25 percent in 1985 to about 15 percent in 1998 (Industry Canada, "Canada and the Global Knowledged-Based Economy," mimeograph, Slide 5, 2000).

becoming net exporters of capital, reversing the historical trend of being a major capital importer in world markets. Most inbound investment (over 70 percent) comes from the United States, while over half of our outbound investment goes to that country.

Migration

Migration refers to the general movement of people into and out of a country, but the primary interest here is with regard to labor markets.[11] Although the number of people emigrating from Canada increased slightly over the 1990s (Figure 9), the percentage of the population that actually moved across borders (both emigrants and immigrants) was less than 1 percent of Canada's total population in most years.[12] This ratio had fallen since the mid-1970s, when crossborder moves were about 1.3 percent of Canada's total population. The United States receives about a third of Canadian emigrants, 70 percent of whom are Canadian born (the rest are non-Canadians who resided here for some time).

The percentage of immigrants who come to Canada from the United States is less than 3 percent of the total. Thus, most of our trade in people with the United States is one-way — Canadians moving south.

Although the flow of labor across borders is relatively small as a percentage of the total population, many migrants leaving this country tend to have higher incomes than the Canadian population as a whole. For example, about a quarter of emigrants to the United States had income of more than $50,000 in 1995 (Zhao, Drew,

11 The number of migrant workers is smaller than the total migrant populations shown in Figure 9. A significant portion of immigrants and emigrants are not workers. They include children and students, adults unwilling or unable to find work, and the elderly. Children and students may remain in the receiving country and eventually attach themselves to the workforce; so may the unwilling adults of working age. But the older immigrants are unlikely to work in the new country.

12 This figure is an average of the data for the 1997–99 period (Statistics Canada, CANSIM database).

and Murray 2000). Even this estimate may understate our loss in terms of the quality of the workforce. Many Canadians moving south have been low-income students but take highly paid jobs in management and professions. The loss of these emigrants could significantly affect the long-run productivity of the economy. Skilled workers are able to move south fairly easily, especially since 1989, when the North American Free Trade Agreement relaxed rules for obtaining visas in the signatory countries.

In future, however, international labor markets may become more integrated than they are now. The Internet is providing firms with new opportunities to recruit employees not just within the regional market but across international boundaries as well.

Even more important, low fertility rates eventually will have a significant impact on the availability of labor in industrialized countries, as the number of total workers plateaus within the next two decades.[13] One result will be international labor imbalances, with industrialized countries short of labor, while the developing countries, still facing underemployment and high population growth, will be able to provide workers to satisfy the demands of the developed world. Many industrialized countries will import workers from Third World countries with large populations. Thus, we can expect potentially significant labor flows — of not just skilled workers but even unskilled ones. Countries will compete for the best workers, and international labor markets will become more integrated.

Canada, with its history of successfully integrating migrants, should be in a good position to attract new people in this international labor market. But competition will be fierce for skilled and

13 Robson (forthcoming) predicts that the working-age population will plateau in Canada by 2020. The European Union is facing a drop in population from 729 million to 628 million over the next 50 years; immigration levels are thus likely to increase sharply to make up for the fall in population (*Guardian Weekly*, August 3–9, 2000, p. 3). Japan's and Europe's populations are aging more quickly than those of North America, so the problem of increasing labor shortages will be felt in these countries before it hits North America. (See Gokhale and Raffelhüschen 2000 for predicted elderly dependency ratios by 2015 for European countries and the United States.)

unskilled workers. It will, therefore, be important to attract immigrants and to retain the best workers we have now.

Summary

Overall, Canadian markets, especially capital markets, are integrating with those of the rest of the world. Although such globalization is important, trade is not without friction, and borders still matter (Helliwell 2000). Helliwell (1998) computes the ratio of interprovincial trade in Canada to provincial-US-state trade for the 1988–96 period at roughly 30 times for goods and 13 times for services. Similarly, interprovincial migration is 100 times Canada-US migration. Thus, while economic integration with the United States is increasing, interprovincial flows of trade and labor are still much stronger, especially when one corrects for distance.

Borders also still matter, to a certain extent, in capital markets. Most finance studies show that domestic factors influence stock prices in Canada, and some segmentation remains for Canadian and US equity markets (Mittoo 1997). Helliwell and McKitrick (1999) show that interprovincial capital markets in Canada are well integrated while some segmentation remains at the international level (Helliwell 2000). Canada is integrating with world capital markets, but borders have not altogether disappeared at the international level.

The future likely promises more, not less, integration for the Canadian economy with the rest of the world. Canada has shown great success in meeting challenges. Historically, it has been a trading nation, reliant on imported capital. Today, it is a maturing economy that exports substantial capital to the rest of the world. Canadian businesses are increasingly global, and entrepreneurs are more and more willing to engage in crossborder trade.

The Role of Canadian Governments

To what degree can Canadian governments support the country's role in the new global economy?

During the past few decades, Canadian federal, provincial, and municipal governments grew faster than the Canadian economy (see Figure 10). In fact, they grew faster than total US governments even though the two countries' public sectors were virtually the same size in the late 1960s at about 30 percent of GDP. Government spending now accounts for about 43 percent of GDP in Canada, but only 33 percent in the United States. In other words, over somewhat more than three decades, a 10 percentage point gap has developed between the two countries.[14]

Why have Canadian governments grown so much more than their US counterparts? Governments in both countries assume similar responsibilities, including protection, education, health care, social services, environment and housing, infrastructure, and public debt charges. Yet the experiences of the two countries have been quite different. Has the greater growth of Canadian governments been a consequence of their spending much more on important services such as education, infrastructure, and health care? Or have other factors led to Canadian governments' having a much larger role than US governments in the 1990s?

To answer these questions, I compare Canadian and US government expenditure by category using information from the Organisation for Economic Co-operation and Development (OECD) and supplementing it with a different data set.[15] Some other methodological differences in measurement arose, but I am able to

14 Figure 10 uses data from the Organisation for Economic Co-operation and Development that are based on National Accounts. See also John Richards (2000), who shows that Canadian government expenditures have grown as fast as those of Europe. On average, Canadian governments are somewhat smaller than European governments, although comparisons with our major trading partners — primarily the United States, followed by the United Kingdom and Japan — are most relevant for Canada.

15 The OECD data provide an inadequate number of categories for breakdowns over a 30-year period. Instead, I used Public Accounts data from Canada and the United States. The two countries have different classifications among categories, for which I tried to correct. For example, US Public Accounts data include most health care expenses as part of social services; I adjusted the numbers to separate health care expenditures from the social services data.

provide an overall view that demonstrates some interesting differences in the role of government in Canada and the United States.

Protection

Figure 11 provides a comparison of protection expenditures — on national defense, law and order, and foreign affairs — as a percentage of GDP for Canada and the United States. In the late 1960s, the United States spent almost 10 percent of its GDP on protection, about 6 percentage points more than Canada — a difference that reflects the days of the Vietnam War, when US governments spent almost 9 percent of GDP on military expenditures while Canadian governments spent less than 3 percent. Starting in the 1970s, the US government began to curtail protection expenditures — except for President Ronald Reagan's buildup of military expenditures in the 1980s — so its spending in this category has been running less than 6 percent of GDP, about 2 points more than Canada's.

Canadian governments did reduce national defense expenditures substantially after World War II, but only from less than 3 percent of GDP in the late 1960s to 1.5 percent of GDP in the 1990s. Total protection expenditures changed very little, however.

Overall, US governments have saved about 4 percentage points in the protection-expenditures-to-GDP ratio in recent decades, an amount that could accommodate growth in other expenditures or result in lower taxes. Canada has seen little change in its ratio.

Education

Has spending on education contributed to the faster growth of Canadian governments? Figure 12 provides both countries' public spending on primary, secondary, and postsecondary education as a percentage of GDP. Historically, Canadian governments have played a greater role in education than the US governments, especially in postsecondary education. In the late 1960s, Canadian education expenditures were almost 6 percent of GDP, about a

percentage point more than that in the United States. No significant change occurred until the early 1990s, at a time of deep recession for the Canadian economy, and education expenditures reached a peak of almost 8 percent of GDP. As the economy recovered and federal and provincial governments curtailed growth in education expenditures, they declined to less than 7 percent of GDP by 1995, only slightly more than in the mid-1970s.

US spending on education rose to 6 percent of GDP in the early 1970s but changed little over the next 25 years. Thus, despite the recent curtailment of education expenditures, Canada spends about a percentage point of GDP more on these services than does the United States. But this spread has not changed significantly from the late 1960s.

Health Care

Health care is often touted as a significant factor in the large differences between public expenditures in Canada and the United States. Canadian governments greatly expanded their role in health care in the late 1960s, when they added, to the hospital funding supplied in earlier years, the medicare program, which provides public funding of primary care. US governments have not funded health care to the same extent; public programs south of the border concentrate on the elderly and the poor. By 1970, Canadian public health care expenditures were about 5 percent of GDP, 2 percentage points more than US expenditures (Figure 13). However, because of escalating health care costs in the United States,[16] governments there have been substantially increasing their expenditures on health care. By 1996, Canadian and US governments were

16 Private health care expenditures in the United States were about 7 percent of GDP while public expenditures were 6.7 percent in 1996. In Canada, private expenditures were about 2.8 percent of GDP while public expenditures were 6.6 percent in 1996. Thus, total public and private expenditures on health care as percentage of GDP are about 50 percent more in the US compared to Canada even though both governments spend the same amount of funds on health care in relation to the size of their economies.

spending virtually the same proportion of GDP. While Canadian expenditures had risen 1.5 points of GDP over the previous 30 years, US expenditures more than doubled in relation to the size of the economy, rising by over 3.5 percentage points of GDP.

Thus, health care is not an explanation of a burgeoning Canadian public sector. Instead, health care spending led to much faster growth of the public sector in the United States, by at least 2 points of GDP.

Social Services

While health care program expenditures do not explain why governments have grown so much faster in Canada than in the United States, social services (excluding health care) do provide one such reason. In the 1960s, social security, social welfare, and labor force programs (primarily unemployment insurance) were less than 6 percent of GDP in both Canada and the United States (Figure 14). By the mid-1990s, however, social services expenditures made by governments were about 12 percent of GDP in Canada but only 8 percent in the United States. Thus, public expenditures on social services have increased almost 4 percentage points of GDP more in Canada than in the United States. The sharpest change occurred after the severe recession of 1981, when social services spending in Canada accelerated but declined in the United States.

Why has spending on social services increased so much in Canada? The three largest components — old age security (including the Canada Pension Plan), provincial-local social assistance, and labor force programs (including employment insurance)[17] — cost $118 billion in 1996, an increase of over $88 billion from 1980.

Expenditures for old age security grew from about $9 billion in 1980 to $34 billion in 1996, accounting for almost a third of the increase in the social services category. The growth of old age secu-

17 The balance of social expenditures include veteran pensions, tax credits and rebates (such as the child tax benefit), and other social services (about a sixth of the total).

rity reflects the growth of the aging population, who receive indexed old age pensions and some of whom also get the guaranteed income supplement that provides additional income relief to those with low incomes.

Social welfare and other provincial social services more than quadrupled — from $8 billion to $34 billion — between 1980 and 1996. Provincial-local social services and federal employment insurance expenditures depend on unemployment levels (which, in turn, can be affected by peoples' incentives to find work). Employment insurance (EI) spending also more than quadrupled — from about $4 billion to $18 billion — in the same period. These two expenditures alone account for almost half of the increase in social services expenditures by Canadian governments since 1981.

In the 1990s, federal and provincial governments reformed social welfare and EI programs to reduce their benefits, in part in reaction to growing expenditures and the fiscal necessity of dealing with high deficits. These cutbacks, as well as lower unemployment rates, slowed social services spending in relation to the growth of the economy after 1993.

One can also view health care services as another form of social assistance. Although social services in Canada have grown much more rapidly than in the United States, the converse is true for health care services, as shown above. If one combines health care with social services, total expenditures in Canada have grown about 2 percentage points of GDP faster than in the United States. In brief, Canadian governments have been vigilant about keeping health care expenditures from rising less quickly than in the United States, but they have been less careful about social services, particularly EI and social welfare.

The Environment, Community Development, and Housing

The environment, community development, and housing category includes natural resources, parks and recreation, housing, regional and community development, and sewage and solid waste man-

agement. Canadian and US governments spend significant funds on these areas. In the late 1960s, Canadian expenditures equaled 3.3 percent of GDP, about 1.2 percentage points more than US governments' total (Figure 15). Over the next 30 years, US governments spent about 2 to 3 percent of GDP on these programs, while Canadian governments increased expenditures to as much as 6.5 percent of GDP, falling to about 4.5 percent by 1995.

Infrastructure

Governments play an important role in the economy through their expenditures on infrastructure, including roads, seaports, airports, and communications.[18] Figure 16 compares public support of infrastructure as a percentage of GDP for the United States and Canada. Historically, Canadian governments have spent more. In 1970, Canadian infrastructure expenditures were over 2.3 percent of GDP, but they tracked down to less than 1.5 percent by 1996. US infrastructure expenditures were 1.6 percent of GDP, falling roughly to 1.1 percent by 1996. Canadian infrastructure expenditures have thus been declining relative to US expenditures.

A point worth noting is that infrastructure expenditure by Canadian governments to benefit the communications and transportation industries was greater than that by US governments until the early 1990s, when the relative positions were reversed (see Chapter 4).

Public Debt Charges

A dramatic difference in Canadian and US expenditure patterns is the growth of interest expenses on gross public debt (see Figure 17). During the late 1960s, public debt charges were about 3 percent of GDP in Canada and 2 percent in the United States. By 1998, public

18 *Infrastructure expenditures* here refer to fixed capital investment, including that for government own-use purposes. Thus, for example, a building used by a government department is included in these expenditures. The analysis in Chapter 4 uses data that exclude infrastructure expenditures for government own-use.

debt charges were almost 9 percent of GDP in Canada while less than 4 percent in the United States. Thus, a significant reason for the 10 percentage point gap that opened up between Canadian and US public expenditures in proportion to GDP by the 1990s was the growth of public debt charges, which accounted for 5 points of the gap. These numbers are of no surprise to Canadians, who became accustomed to deficit elimination and debt reductions in the 1990s. Fiscal mismanagement on the part of federal and provincial governments from the late 1970s to 1995 resulted in excessive federal and provincial deficits and the buildup of debt. As shown in the figure, public debt charges as a proportion of GDP began to decline only in 1996.

One reason that government public debt charges in the United States have not grown as quickly is that most US states are required by their constitutions or by legislation to balance their budgets, unlike Canadian provinces, which face no similar restrictions. Thus, many states balanced their budgets during the 1980s. Also, federal debt grew faster in Canada than in the United States during the same period. Overall, Canadian governments showed very little discipline in keeping expenses within a manageable budget during the mid-part of the decade. The provinces, especially Alberta and Saskatchewan, were the first to constrain expenditures, and then the federal government followed.

Summary

Canadian governments were virtually the same relative size as US governments in the late 1960s. By the mid-1990s, however, Canada's public sector had grown far faster than that in the United States, resulting the opening of a 10 percentage point gap between the two countries in public expenditures as a share of GDP. Examination of the individual components of the expenditure suggests the following.

- Almost half of the gap is explained by the greater growth of public debt in Canada. Canadian federal and provincial gov-

ernments exhibited poor financial discipline from the late 1970s to the mid-1990s.

- About 2 percentage points of the gap result from the growth of social services and health care in Canada relative to the United States. The largest part of the growth here is explained by accelerating expenditures on provincial-local social services and federal EI benefits. Half of the gap between Canadian and US social services is offset by faster growing health expenditures in the United States.
- About 1 percentage point of the gap is the outcome of faster growth in Canada for environmental and housing expenditures, which include resource conservation and regional and community development programs.
- The growth of other expenditures explains the rest of the gap.
- The growth of government in Canada relative to the United States has not been due to faster Canadian growth in infrastructure or education, areas in which US governments have increased expenditures in proportion to GDP as fast as have Canadian governments. The United States has, however, benefited from reallocating defense expenditures to health care and productivity-enhancing expenditures so that the size of its public sector has not grown much relative to GDP in the past decades.

Tax Policies

Given that Canadian governments' expenditures have grown more quickly than US governments', it is not surprising that tax levels here have grown more quickly as well. As illustrated in Figure 18, Canadian and US total-revenue-to-GDP ratios[19] were similar in the

19 An alternative measure is the tax-to-GDP ratio, which does not include other revenue governments receive, such as royalties from the ownership of natural resources, investment income, and user fees. A plot of tax-to-GDP ratios would produce a pattern similar to that of revenue-to-GDP ratios.

late 1960s but diverged considerably in the following 30 years. Now Canadian governments tax much more than their US counterparts.

The types of taxes collected by governments include personal income, corporate, sales and excise (indirect) taxes, payroll taxes, and property taxes. Table 2 compares the mix of tax types in Canada, the United States, and the other Group of Seven (G-7) countries. Canada tends to rely most heavily on personal income taxes and less on payroll taxes. Compared with the United States, we also rely more heavily on sales and excise taxes.

Revenue-to-GDP ratios, as reported in Table 2, are often used to indicate the competitiveness of a structure. But such numbers are meaningless for this purpose. For example, corporate income tax as a proportion of GDP depends on the amount of corporate profits earned, not just on the level of taxes raised. Thus, corporate tax-to-GDP ratios provide little indication of how taxes impinge on investments across countries. Similarly, personal income tax as a proportion of GDP provides little information about how taxes affect the labor supply. GDP is not the same as income paid to labor, and other taxes, such as sales and excise taxes, can affect the incentive to work.

A better measure for explaining how taxes impinge on decisionmaking is the *effective tax rate* — the amount that a taxpayer would be assessed on income earned for an activity that is sufficiently profitable to cover all of its costs. Since taxes themselves add to the cost of undertaking the activity, the effective tax rate is a good measure for understanding how much the system discourages investment or working decisions. For example, suppose a person is willing to give up leisure and go to work at $6 an hour without paying taxes. However, if she must pay income and sales taxes equal to $4 dollars an hour, the same person demands $10 an hour as compensation to cover both the value of her time and the taxes. Thus, the effective tax rate is 40 percent if calculated as a proportion of gross-of-tax income (that is, $4 ÷ $10).

Similarly, the effective tax rate for a business is the amount of tax calculated as a percentage of income earned by a project that is sufficiently profitable to cover the cost of obtaining bond or equity

Table 2: ***The Tax Mix in G-7 Countries, 1996***

	United States	United Kingdom	Japan	Italy	Germany	France	Canada	OECD Average
				(% of GDP)				
Total tax receipts	28.5	36.0	28.4	43.2	38.1	45.7	36.8	37.7
Tax types								
Personal income tax	10.7	9.3	5.7	10.8	9.4	6.4	13.9	10.1
Corporate income tax	2.7	3.8	4.7	4.0	1.4	1.7	3.3	3.1
Employees' social security contributions	2.0	2.6	4.0	2.9	6.7	5.9	2.0	2.9
Employers' social security contributions	3.7	3.5	5.3	10.2	7.8	12.2	3.9	5.5
Taxes on goods and services	4.9	12.7	4.4	11.2	10.6	12.5	9.2	12.3
Other taxes	3.5	4.2	4.3	4.0	2.1	6.9	4.6	3.8

Source: OECD 1999b.

financing. For example, suppose a project earns a before-tax rate of return on capital equal to 10 percent, but after the payment of corporate income, capital, and property taxes, the firm is left with a 6 percent return on capital that is just enough to cover the cost of borrowing the money. The effective tax rate in this example is 40 percent, which is the amount of tax paid as a percentage of the before-tax rate of return for the marginal project (that is, 4% ÷ 10%).

The Taxation of Labor

For an example of effective tax rate measures — one that is the basis of my analysis of tax policy in Chapter 4 — consider the average and marginal tax rates on labor earnings faced by a single earner with two children in Ontario for 2000 (see Figure 19). The *average*

tax rate is the amount of tax paid as a percentage of the income earned. The *marginal tax rate* is the amount of tax paid on the income earned by the taxpayer for the last hour of work. The figure takes into account federal and provincial personal income taxes and federal payroll taxes, as well as tax transfers in the form of the child tax benefit and the GST credit. But sales and excise taxes are excluded (although they affect labor decisions).

As displayed in the chart, the average rate is negative for taxpayers with family income below $20,000 since the child tax benefit and the GST credit more than offsets the amount of tax to be paid. But after $20,000 in income the average rate rises quite quickly, reaching close to 20 percent at family income of about $40,000. Thus, in terms of the average tax rate, the system is highly progressive in the sense that the rate rises with income levels below $40,000 but is less progressive thereafter.

Marginal tax rates are, however, quite variable. They are about 25 percent for low incomes, rise to almost 70 percent for incomes around $30,000, and decline thereafter to closer to 50 percent. High marginal tax rates in low- to middle-income ranges result from ceiling limits on payroll taxes (no payroll tax is paid beyond $39,000 in income) and the clawback rates of the child tax benefit and GST credit (as more income is earned, the benefits are reduced by a percentage). This pattern of marginal tax rates that oscillates over income is similar for taxpayers in all provinces (see Poschmann and Richards 2000) and those in particular situations (such as two-earner families, and the elderly).

What labor tax rates are important for decisionmaking? It depends on the kind of decision. If the question is how taxes affect the choice of hours of work, marginal tax rates are particularly important. For example, suppose that a forestry worker earning $30,000 is offered some overtime work. Since the marginal tax rates at this income level are well over 50 percent, they probably discourage him from taking on more work. Thus, the marginal rate is most important in understanding how the tax system influences work-effort decisions.

On the other hand, if the question is whether a person might move from one province to another or from Canada to the United States, the average tax rate is the relevant concept. Once the jurisdiction of residence is changed, all income becomes subject to a different tax schedule so the critical point is how much more or less tax will be paid on total income. Canada tends to have higher average tax rates than the United States on annual income of $40,000 or more. Thus, the tax system may encourage individuals who earn income above this level to migrate to the United States (assuming that all other factors are the same). Wagner (2000) suggests that the personal income tax in Canada has had some impact on emigration to the United States, although it is not the only factor involved. His data do not, however, include payroll, sales, and other taxes that affect the decision to migrate and may not, therefore, accurately estimate the impact of taxation on migration decisions.

Taxes on Capital

Taxes imposed on businesses affect capital investment. To gain an understanding of how the Canadian tax system can affect investment, consider Figure 20, which charts an historical series of effective tax rates on domestic-owned capital aggregated for machinery, land, structures, and inventories for two nonresource sectors — manufacturing and "other services" — as well as for an all-sector average.[20] The effective tax rates were calculated for investments that earned a sufficiently high return to compensate international investors for the after-tax cost of financing capital in Canada (see Chen 2000 for further elaboration). Included in the measure are the impact of federal and provincial corporate income taxes, capital taxes, and sales taxes on capital inputs, all of which affect the investment decisions of large Canadian corporations.

From 1986 to 1989, Canada undertook a significant tax reform that lowered corporate income tax rates and broadened tax bases

20 I do not provide a similar historical series for the United States because sufficient data are not available for the same time period.

by cutting back depreciation allowances and eliminating investment tax credits and a deduction for inventory costs.[21] Further, during the past 20 years, Canadian inflation rates have fallen dramatically, from average levels of close to 9 percent in the late 1970s to 2 percent today.

The overall impact of corporate tax reform and declining inflation rates has been to increase the effective tax rate on capital in Canada. However, both tax reform and the decline in inflation have resulted in more neutral treatment of industries by substantially reducing differences among nonresource industries.

Before 1985, the effective tax rate for all nonresource sectors was about 16 percent of the rate of return on capital, but it increased thereafter to 28 percent. The corporate tax reform in the 1986–89 period was meant to raise taxes on capital (the tax relief associated with the rate reductions was less than the tax gained from broadening the tax base). Reductions in inflation rates had ambiguous impacts on effective tax rates. Companies that relied on depreciable and inventory assets found that lower inflation rates increased the value of the depreciation and inventory cost deductions available to them, thereby reducing their effective tax rates. However, companies that tended both to invest in land and assets that qualified for accelerated depreciation or investment tax credits and to finance investments with borrowed funds found that their effective tax rates increase with declining inflation rates.

Thus, the experience of industries has varied substantially. Some, such as construction, forestry, and communications, found that their effective tax rates fell during the two decades because of a combination of the declines in corporate income tax rates and the inflation rate. On the other hand, manufacturing, transportation and storage, public utilities, and retail trade found that their effective tax rates increased because the loss of accelerated depreciation, investment tax credits, and the inventory allowance, as well as the decline in the value of the tax shelter provided by debt financing,

21 See Jog and Mintz (1989) for an evaluation of the 1987 corporate tax reform in Canada. See also Mintz (1995a) for a survey of the corporate tax.

more than offset rate reductions and other beneficial changes in the system.

The combination of tax reform and lower inflation also improved the neutrality of the corporate tax among the country's nonresource sectors. A more neutral treatment of these sectors can enhance overall productivity by removing tax barriers that would otherwise undermine the allocation of resources in the economy. However, the increased level of capital taxation in Canada as its economy becomes more open reduces its productivity by deterring investments.

What Can Be Learned?

As demonstrated, Canada's per capita income has been rising less quickly than that of the United States. Inequality in after-tax Canadian incomes has also increased. At the same time, Canada is becoming more integrated with world markets — capital and jobs are becoming more mobile, and even skilled labor markets are showing signs of increased economic integration at international level.

Meanwhile, Canadian governments have grown more quickly than US governments. In the 1960s, the two countries had governments of similar size. Today, Canadian governments are much larger, in part as a result of high levels of debt finance for government expenditures.

Perhaps more worrisome is the fact that Canadian governments have not been growing as a result of the kind of expenditures that can be viewed as enhancing the opportunity for economic growth and for improving the quality of life. Public expenditures in education and infrastructure have not been the reason Canadian governments have grown so much bigger than the US governments. The latter have constrained spending while reallocating funds from national defense to health care and other priority programs.

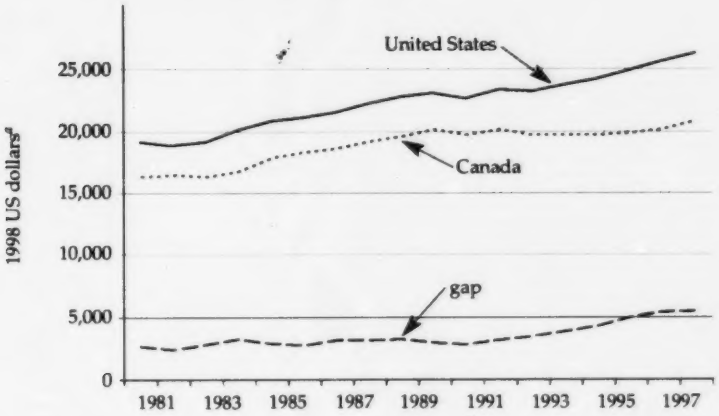
Has the faster growth of public expenditure in Canada affected its economic performance? The evidence is suggestive. While gov-

ernments have increased their demands for resources, per capita incomes in Canada have risen less quickly than in the United States. Are economic performance and the size of government related? Clearly, certain public expenditures, such as those on education and infrastructure, are critical for improving productivity in the economy (see Ahn and Hemmings 2000 for a detailed review, and further discussion in Chapter 5). Thus, some public expenditures ultimately could lead to higher incomes and employment. However, Canadian governments spend vast resources on programs that are not necessarily productivity enhancing, and these expenditures must be financed by taxes. To the extent that the Canadian economy is increasingly integrated with the rest of world, the existence of high taxes and inefficient public programs can deter businesses and people from locating here.

The lesson to be learned is that governments play a critical role in the economy. When they spend wisely, they can promote better economic growth. However, when they make poor decisions, the economic costs can be exhorbitant since taxes become too high.

Figures to Accompany Chapter 3

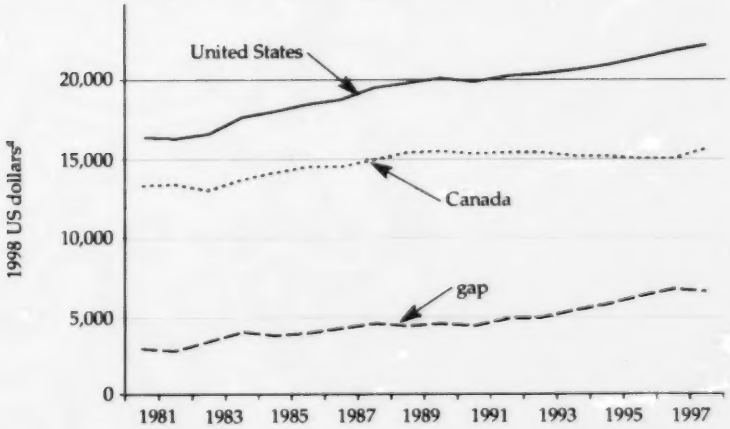
Figure 1: ***Personal Income per Capita, Canada and the United States, 1981–98***



[a] Currency conversions based on 1998 purchasing power parity (PPP).

Sources: Statistics Canada, CANSIM database; CITIBASE (US).

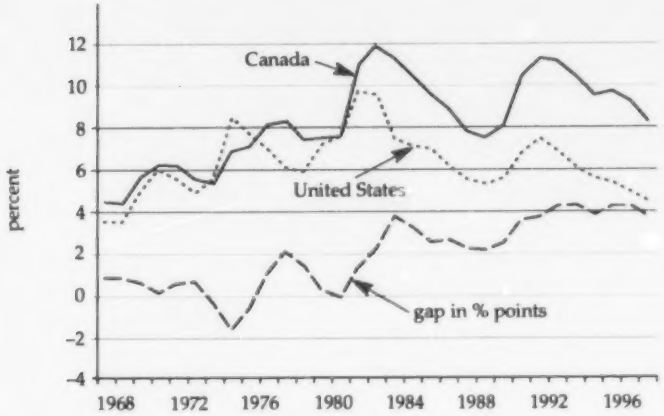
Figure 2: ***Disposable Income per Capita, Canada and the United States, 1981–98***



[a] Currency conversions based on 1998 purchasing power parity (PPP).

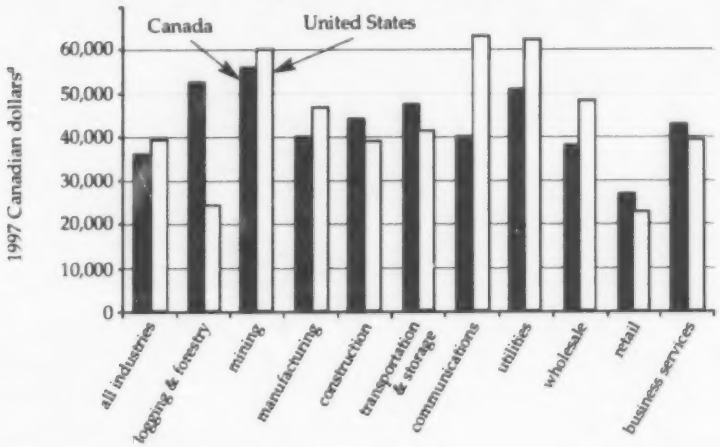
Sources: Statistics Canada, CANSIM database; CITIBASE (US).

Figure 3: ***Unemployment Rates, Canada and the United States, 1968–98***



Sources: Statistics Canada, CANSIM database; CITIBASE (US).

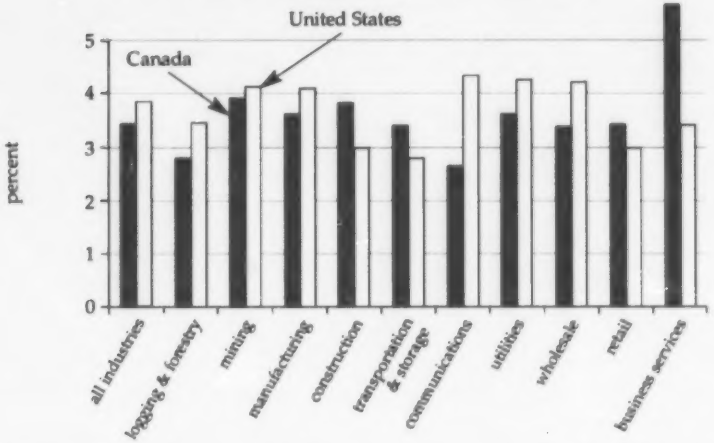
Figure 4: ***Average Earnings per Full-Time Equivalent Employee, by Industry, Canada and the United States, 1997***



[a] Currency conversions based on 1997 PPP.

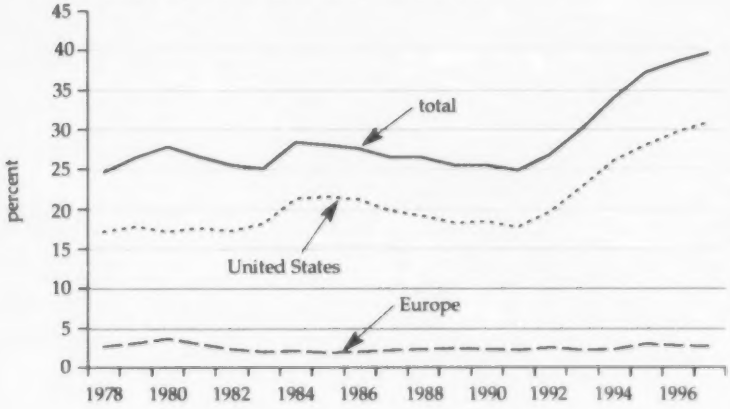
Sources: Statistics Canada, CANSIM database; United States 1990 and 1999.

Figure 5: ***Average Annual Growth Rate in Average Earnings per Full-Time Equivalent Employee, by Industry, Canada and the United States, 1997***



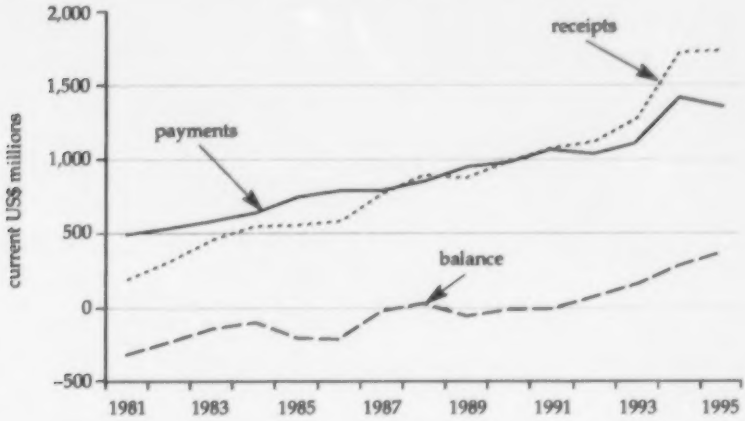
Sources: Statistics Canada, CANSIM database; United States 1990 and 1999.

Figure 6: ***Canada's Exports to the United States, Europe, and Total, as a Percentage of GDP, 1978–97***



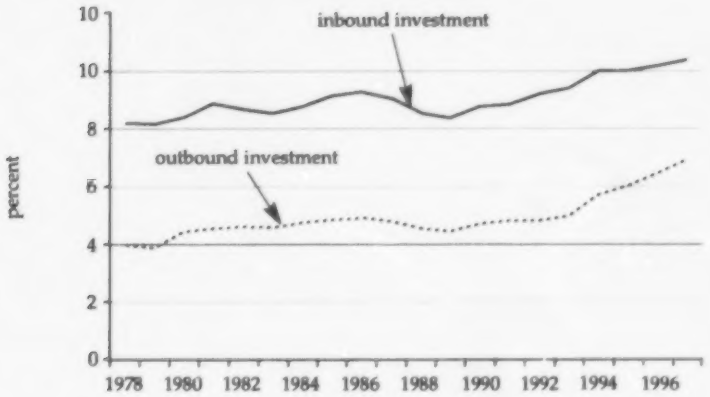
Source: Statistics Canada, cat. 67-001-XPB.

Figure 7: ***Technological Balance of Payments, 1981–95***



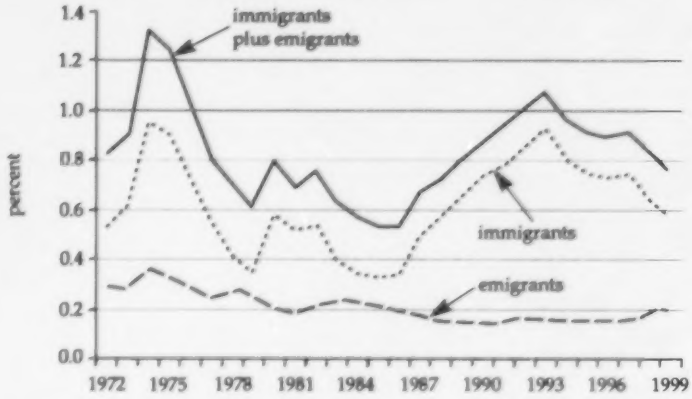
Source: OECD 1997.

Figure 8: ***Investment (Stock), Outbound as a Percentage of Canadian-Owned Assets and Inbound as a Percentage of Total Domestic Assets, 1978–97***



Source: Statistics Canada, cat. 67-202-XPD.

Figure 9: ***Immigrants and Emigrants as a Percentage of the Total Population, Canada, 1972–99***

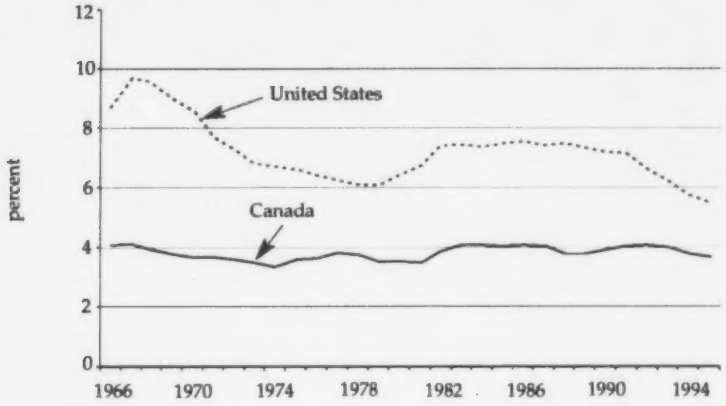


Source: Statistics Canada, CANSIM database.

Figure 10: ***Total Government Spending as a Percentage of GDP, Canada and the United States, 1966–98***

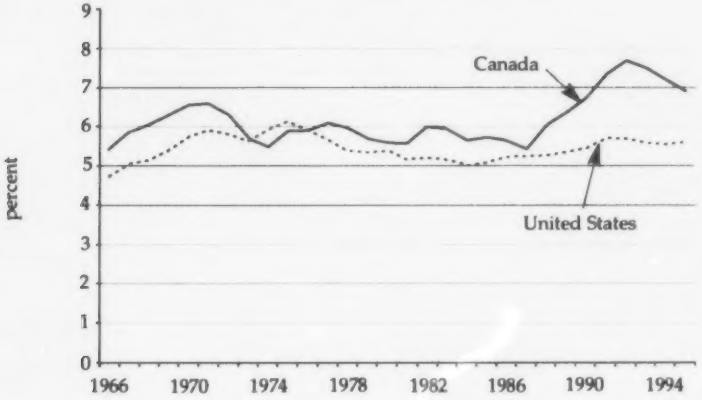
Source: OECD 1999a.

Figure 11: ***Government Spending on Protection as a Percentage of GDP, Canada and the United States, 1966–95***



Sources: United States 1969–1999; 1999; OECD 1995; 1999a.

Figure 12: ***Government Spending on Education as a Percentage of GDP, Canada and the United States, 1966–95***

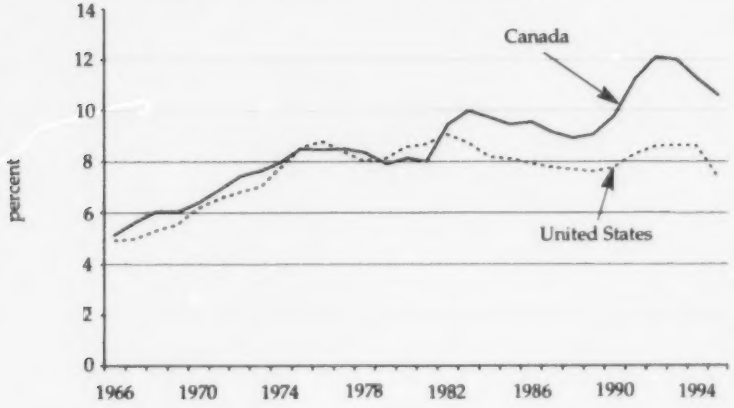


Sources: United States 1969–1999; 1999; OECD 1995; 1999a.

Figure 13: ***Government Spending on Health Care as a Percentage of GDP, Canada and the United States, 1970–96***

Sources: United States 1969–1999; 1999; OECD 1995; 1999a.

Figure 14: ***Government Spending on Social Security and Social Welfare (Net of Health Care) as a Percentage of GDP, Canada and the United States, 1966–95***



Sources: OECD 1995; 1999a.

Figure 15: ***Government Spending on the Environment, Community Development, and Housing as a Percentage of GDP, Canada and the United States, 1966–95***

Sources: United States 1969–1999; 1999; OECD 1995; 1999a.

Figure 16: ***Government Infrastructure Subsidies as a Percentage of GDP, Canada and the United States, All Industries, 1977–96***

Sources: Statistics Canada, CANSIM database; United States 1998.

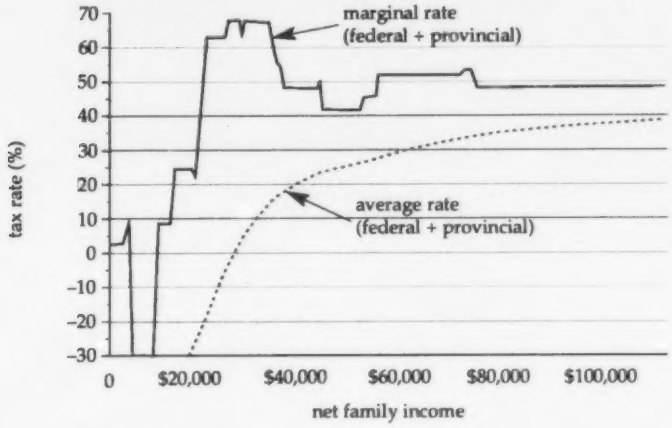
Figure 17: ***Government Gross Debt Interest Payments as a Percentage of GDP, Canada and the United States, 1966–98***

Source: Canada, Department of Finance, *Economic Review*, various years.

Figure 18: ***Ratio of Total Revenue to GDP, Canada and the United States, 1966–98***

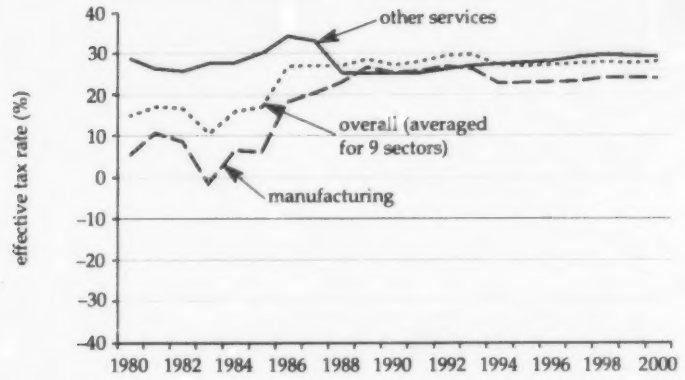
Source: Canada 2000.

Figure 19: ***Average and Marginal Tax Rates on Labor, Canada, 2000***
(single-earner Ontario family with two children)



Source: C.D. Howe Institute.

Figure 20: ***Effective Corporate Tax Rate on Capital Investment, Nonresource Sectors, Canada, 1980–2000***



Source: University of Toronto, International Tax Program.

4 Taxes, Subsidies, and the Cost of Doing Business

Governments can play a significant role in improving the performance of the Canadian economy. Their spending on public services, such as education and infrastructure, can improve productivity. Yet, taxes levied to fund public services can erode entrepreneurs' ability to choose the most economically viable projects that would enhance Canadians' opportunities to earn income.

The previous chapter reached two conclusions:

- Starting in the mid-1960s, Canadian governments grew quickly and are now much larger in relative size than US governments. Meanwhile, the Canadian economy has become more integrated with the rest of the world.
- As Canadian governments grew, they taxed more heavily because of the rapid increase in public debt charges and spending on social services, community development, and the environment. Productivity-enhancing expenditures, such as those on infrastructure and education, have not risen nearly as rapidly.

As Canada becomes more integrated with the rest of the world, these developments can affect our cost of production, which is a

useful indicator of an economy's comparative advantage, productivity, and competitiveness. This chapter thus evaluates the impact of taxes and public expenditure programs on the cost of doing business for each industrial sector in Canada and the United States in 2000.[1] Specifically, I report the effects of various taxes (federal and provincial corporate income taxes, capital taxes, sales taxes, payroll taxes, and user fees). I also consider the subsidies inherent in public programs (social security, education, health care, and infrastructure), which reduce the cost of doing business.

The main conclusions below are twofold. The first is that taxes are a much larger proportion of the cost of production in Canada than they are in the United States. This tax disadvantage is partly offset by our larger subsidies, particularly for health care and education. But overall, Canadian public expenditure and tax policies result in higher production costs. The second conclusion is that taxes and expenditure subsidies have an uneven effect across industrial sectors and activities. The result is an unlevel playing field for businesses that distorts economic decisions and erodes Canada's comparative advantage in world markets. Such distortions reduce the productivity and competitiveness of our economy.

A Brief Description of the Methodology

The methodology I use to assess the impact of taxes and subsidies on the cost of doing business[2] is based on the idea that, in maximizing profits, firms choose output at the level where the incremental income from production equals the incremental cost of

1 The federal and provincial governments have announced their plans to lower personal and corporate income tax rates over the next five years. Such changes would also affect the tax base. The analysis in this chapter does not incorporate these potential policies. Instead, their impact is discussed in the following chapter, when policy developments are considered.

2 The Appendix to this chapter provides more technical detail regarding the methodology used for the calculations.

production, including taxes and subsidies. That incremental cost can be viewed as having two components: production costs (the costs of labor, capital, and other inputs) and net tax costs (tax payments net of subsidies received).

To measure the impact of subsidies and taxes, I use the effective excise tax rate on the costs of marginal incremental production at a location in Canada or the United States. For example, if the effective tax rate is 10 percent, then taxes, net of subsidies, add 10 percent to the cost of production. Thus, the *effective tax rate* on incremental costs is a summary measure of the aggregate impact of taxes and subsidies (which are a negative tax) on business production.[3] Assuming all else is equal, a higher rate for a particular industry increases its overall costs and therefore reduces the incentive to locate production at a specific location.

Conceptually, the model distinguishes between taxes and subsidies that affect labor and those that affect capital costs, the two primary inputs used to produce *value added*, which is the difference between revenues and the costs of intermediate goods and services or, to put the point another way, the return paid to labor and capital used in the production. Thus, the measure of effective tax rates on costs is, in principle, the same as measuring taxes as a proportion of value added.[4]

The *cost of labor* without taxes is salaries, wages, and other forms of compensation paid to workers. It is by far the most important component — about three-quarters — of industrial value added.

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3 Although this approach has certain limitations (as discussed below), it is far more comprehensive than what has been used in previous work. Most studies examine taxes only to measure the cost impact of the tax structure (see, for example, Canada 1998; KPMG 1997). These analyses ignore the effects of public programs financed by taxes. Some research is even more selective; it examines only corporate tax rates without considering the impact of other taxes that can affect the decision to produce goods and services in a particular jurisdiction. This study clearly goes beyond previous work in this area.

4 Value added and costs are measured net of depreciation expenditures. See McKenzie, Mintz, and Scharf (1997) for a detailed discussion of the methodology used here.

Personal income taxes, sales taxes,[5] and payroll taxes can increase the cost of labor while subsidies for education, health care, and social security can lower it. The *effective tax rate on labor* is calculated as a summary measure of subsidies and taxes on labor; this rate is the taxes paid, net of subsidies, as a percentage of the incremental income earned for the last hour worked.

The *cost of capital* includes the costs of financing and risk. Corporate income taxes, capital taxes, and sales taxes on capital goods increase the cost of capital, while public expenditures on infrastructure and on research and development (R&D) lower it. I aggregated the taxes firms pay on capital investment to measure the *effective tax rate on capital*: taxes, net of subsidies, as a percentage of the income generated by marginal investments.

Assuming a simple production technology,[6] I aggregate effective tax rates to compute an *effective tax rate on costs*. This rate is a weighted average of the effective tax rates on labor and capital costs. The only information needed for the final step is the shares of costs that are attributed to labor and to capital in each industry. This split is computed here by industry, using earlier analysis

5 Sales taxes are included in taxes on labor by incorporating not only taxes on goods and services consumed currently but also those goods and services purchased later from money saved today. Sales and excise taxes also apply to business inputs, but it is assumed that these taxes are fully shifted forward by charging higher consumer prices. This assumption is common in the literature (see, for example, Kuo, McGuire, and Poddar 1988). However, it is not necessarily correct since some taxes on business inputs can be shifted back and are borne by producers. Including sales taxes on production, would affect the differences in costs of production across sectors.

6 I use the Leontief specification of costs. A production technology can be characterized either as Leontief (a fixed proportion of labor to capital for each unit of output) or Cobb-Douglas (production is a geometric representation of capital and labor). The Leontief case implies that effective tax rates on inputs are an arithmetic average of effective tax rates, weighted according to the share of costs attributed to labor and capital. This case assumes no substitutability between labor and capital. The Cobb-Douglas case leads to a geometric average of effective tax rates, weighted according to shares of labor and capital. With this representation of costs, the elasticity of substitution between capital and labor is 1. (See the Appendix at the end of the chapter, and McKenzie, Mintz, and Scharf 1997 for further elaboration.)

developed by the Department of Finance's Technical Committee on Business Taxation.

Readers should keep in mind four caveats about this model. First, it does not include the impact of regulatory costs and benefits on the cost of doing business. This limitation is serious, but to measure such costs and benefits would be virtually impossible except for a few selected regulations. Effectively, for the numbers reported below, I assume that the economic benefits of regulations equal their costs and, therefore, can be ignored in the calculations. This tidy equality is, of course, unlikely to be the case, but it is a practical working assumption.

Second, in principle, the model should include property taxes, but properly incorporating them in the analysis would be impossible. Data are not available on an industry basis. Property taxes may also be, in part, a payment for the use of municipal services. Further, part of municipal and education property taxes may be absorbed in real estate values. Implicitly, therefore, I assume property taxes are largely absorbed in real estate prices and, therefore, have no effect on the cost of doing business.

Third, the effect of taxes and subsidies on the cost of doing business depends, in part, on assumptions about economic *incidence* — who actually bears their burden or receives program benefits? (See Box 3.) For example, an employer-paid payroll tax may cause businesses to lower the salaries they pay workers; therefore, it does not cause labor costs to rise. On the other hand, if workers are in position to quit the firm or work less, the payroll tax causes business costs to rise. Similarly, a subsidy for employees' health care and education costs may have no impact on business costs (if worker salaries rise) or may reduce such costs (if workers' salaries are not bid up). Dahlby (1992) concludes that about 70 percent of payroll taxes are shifted back onto labor, the balance forward unto businesses as higher wage costs. Because of these complex possibilities, I provide some alternative calculations, depending on assumptions of economic incidence for taxes on labor.

Fourth, some taxes and subsidies can affect the cost of the risk that workers and owners of capital face. Taxes can impinge heavi-

Box 3: *The Incidence of Taxes and Subsidies and Their Relation to the Cost of Doing Business*

The incidence of taxes and subsidies largely depends on the economic power of buyers and sellers in markets. Both may be shifted either forward or backwards.

In forward shifting, the seller shifts the taxes net of subsidies to the buyer by charging a higher price for the good or services. The buyer has no choice but to absorb the higher charge; if he balks or tries to bargain, the seller withdraws the product and offers it to another market that provides the desired price. The tax is shifted forward to the buyer, who has less market power than the seller.

In backward shifting, the buyer refuses to accept a higher price. If the seller tries to bargain, the potential buyer turns to other vendors who are willing to charge a lower price. The tax is shifted back to the seller, who has less market power than the buyer.

Taxes and subsidies paid to individuals may affect the cost of doing business in different ways. For example, if labor does not respond to changes in wage rates, the effect of labor taxes and subsidies is to reduce the income workers earn. Competition in labor markets results in workers' bidding down their gross-of-tax wage

ly on risky activities since governments take part of the profits but do not share the losses. Subsidies can result in too much risk taking if governments absorb the risks without taking a portion of the gains. I do not, however, explicitly incorporate these impacts in the analysis below.

Despite these four limitations (which are typical of most models), the analysis below is much more comprehensive than usual in its inclusion of expenditures, as well as taxes, in the discussion of their impacts on the cost of doing business.

Taxes, Subsidies, and Labor Costs

The analysis of the impact of taxes and subsidies on the cost of doing business begins with labor markets. Taxes and subsidies for

Box 3 – continued

until they absorb the taxes. Thus, taxes are shifted back as lower net incomes, and firms' remuneration costs remain unchanged.

On the other hand, workers may respond to lower salaries by adjusting their labor supply — moving to other jurisdictions where net pay is higher, undertaking unpaid activities, or withdrawing from the labor force. This movement of labor to avoid taxes continues until the net wage rises to the level available elsewhere. Thus, the net-of-tax wage remains unaffected and all taxes are shifted forward into the higher gross wages firms now pay workers. A factor in this process is often unionization, which helps to protect workers' income, tending to shift taxes forward as a business cost.

Assumptions about shifting are also relevant to capital cost calculations. Analysts believe that taxes on large businesses are largely shifted forward as higher consumer prices or back as lower salaries. Thus, business taxes have little effect on the net-of-corporate-tax return on capital paid owners in international markets. Personal income taxes on capital income may also increase firms' financing costs, as many empirical studies show for equity markets (see McKenzie and Thompson 1996). The calculations in the text, however, assume that any large companies investing in either Canada or the United States obtain financing from international markets; the personal income taxes paid by Canadian investors on the dividends, capital gains, and interest income of large corporations have a smaller impact.

labor can affect the willingness of people to work and of businesses to hire workers. They can also affect workers' mobility to other jurisdictions and their desire to undertake investments in education and training. The types of taxes most relevant to labor markets are personal income taxes, employer and employee payroll taxes, and sales taxes that apply to the goods and services purchased with the after-tax earnings received from work. The most important labor subsidies include government expenditures on social security, education, and health care that affect the standard of living.

Which Effective Tax Rate?

Effective rates of taxes and subsidies on labor can be computed in two ways. One is the total amount of taxes, net of subsidies, as a percentage of wages paid: the *average tax rate*. The alternative is computed as the amount of taxes paid, net of subsidies, on the last dollar of labor compensation received: the *marginal tax rate*. The analyst's choice between the two types of taxes ultimately depends on the decision that is being modeled: work effort, migration, or investment in human capital.

Work Effort

Labor taxes and subsidies clearly affect the desire to work in that they lower or raise the compensation an individual receives for working in the market economy, rather than staying at home or working in unpaid activities. Labor taxes also tempt workers to engage in the underground economy to avoid payment.[7] Further, labor taxes and subsidies affect the decision to participate in labor markets by encouraging some workers to enjoy leisure or to take advantage of public support programs, such as employment insurance (EI) and social welfare, rather than work at all.

The decision to work additional hours in labor markets is affected primarily by the marginal tax rate. The taxes applicable here include not only personal income taxes but also others that impinge on the purchasing power of a person's money income (sales and excise taxes and payroll taxes). They also include public subsidies that lower the cost of labor.[8] For example, health care expenditures covered by governments reduce salary costs to the

7 Reasonable estimates of the size of the underground economy in Canada range from 5 to 10 percent of gross domestic product (GDP). See Erard 1997; Schneider and Enste 2000.

8 In my model, subsidies for social security, education, and health care are estimated on a present-value basis but then converted to an annualized value to make them comparable with marginal tax rates that affect labor effort.

extent that employers or employees do not need to purchase their own health insurance.[9]

Recent studies show that high marginal tax rates discourage work effort to some degree, especially the hours of work and participation rates of secondary workers in the job market (Blundell 1996). Recent Canadian studies (for example, Abbot and Beach 1997) also report that employer-paid taxes can affect the demand for labor. Thus, one expects the marginal tax rate to be important in terms of its impact on the work effort and on firms' hiring workers.

Migration Decisions

The decision of a person or household to migrate from one jurisdiction to another depends on the average, not the marginal, tax rate. As already mentioned, when a Canadian chooses to give up residency to live in another country, his income becomes taxable by that country, not Canada. Thus, a potential migrant is most interested in the differences between the two countries in taxes paid on all of the income earned.

Migration depends, however, on more than just taxes paid. It also depends on the benefits received from or subsidies inherent in public programs. Generally, Canadian subsidies are no longer available to someone who migrates elsewhere, although any subsidies related to the education and training that individuals receive before moving to another country continue to provide benefits in terms of higher salaries.

As already discussed, annual rates of net migration have not been substantial relative to the size of the Canadian population, but they are significant over time. Further, migration is likely to increase in the future as labor imbalances across countries become more severe due to differences in aging and fertility rates. How-

9 The estimates in my calculations are based on the cost of health care benefits provided to the working population as a proportion of wage costs that are covered by governments in both Canada and the United States.

ever, the impact of fiscal decisions on migration flows is difficult to quantify in terms of overall impact on business costs since firms tend to rely primarily on additional work effort from the domestic population, rather than from new workers from abroad. In the analysis below, therefore, I concentrate on the marginal tax rate, which affects the hours supplied by a worker, rather than on the average tax rate, which is relevant to the cost of hiring a person from another country.

Acquisition of Skills

Education and training are critical in terms of their impact on human capital — the skills of workers. Individuals and businesses invest in human capital until the present value of the return on it — increased salary compensation — equals the cost of acquiring it. The cost of education includes tuition fees and ancillary costs as well as the income forgone by spending time learning rather than working.

The effective tax on human capital is based on neither the current marginal nor the average tax rate. Rather, I estimate the tax as a proportion of the return to investments in training and then convert to an annualized value in relation to the gross salary costs firms face. In other words, the return on education is the increased income received in the future, net of the cost of education. To calculate the impact of taxes and education subsidies on annual salary costs, I first calculate the present value of taxes and subsidies paid on the higher compensation received in the future (the marginal tax rate on the last dollars earned in the future). I then subtract the present value of tax benefits and subsidies provided for education and training. Personal income taxes apply to the earnings received from education but reduce its cost (including the forgone earnings that would be subject to personal income tax). Sales taxes reduce the value of earnings from education, increase the costs of intermediate goods used in the education process (such as books and supplies), and reduce the cost of forgone net earnings. Payroll taxes

may apply to earnings from human capital (although only insofar as those earnings are above or below statutory limits) but lower the cost of forgone net earnings. Subsidies provided through public expenditure programs lower the cost of acquiring education.

The progressivity of the tax system tends to increase the tax rate imposed on human capital. When individuals make investments in education, their taxable income tends to be low. Thus, the tax benefits from deducting education costs may be small since marginal tax rates are low. However, when the same individuals have acquired skills and are earning more in the future, they may pay personal taxes at much higher marginal tax rates. For example, suppose that an additional year's worth of education costs $10,000 but results in $20,000 of future earnings at present value. The implication is that the net present value (benefits minus costs) of an additional year of education is $10,000. If the tax rate is 25 percent at the time that person is in school, the government provides a $2,500 net subsidy for deductible education costs. However, if the marginal tax rate on future earnings is 50 percent, the amount of tax paid on the benefits of one more year of education is $10,000 in present value terms. The total tax paid is $7,500 ($10,000 – $2,500) on an investment worth $20,000 today. The effective tax rate on education is therefore 37.5 percent of education pre-tax costs ($7,500 ÷ $20,000).

This example is extreme. A significant role of governments in relation to human capital is to provide heavily subsidized education and training for businesses and workers. Most workers receive subsidized public education when they are young, and it is becoming more frequent for them to acquire skills throughout their lives. Further, the training costs incurred by businesses tend to be expensed, rather than depreciated, even though the value of such training may last many years if the employee stays with the firm. Governments also provide other tax benefits to education, such as the Canadian registered education savings plan and similar US tax schemes to reduce the cost of education (these are not included in my calculations). Generally, public subsidies for education and training are quite significant.

How Do Canadian and US Labor Taxes and Subsidies Stack Up?

To analyze the impact of taxes and subsidies on labor costs, I start by considering the most important Canadian-US differences in tax regimes as of the year 2000.

Canadian-US Labor Tax Differences

The taxes paid on labor earnings include federal and provincial personal income taxes, payroll taxes, sales and excise taxes, and the taxbacks (clawbacks) of social security benefits. The most important differences are the following.

Federal Personal Income Taxes. Canadian and US federal personal income tax rates differ over income ranges and types of taxpayers. In 2000, Canadian federal personal income taxes were levied on all taxpayers at three rates: 17 percent on the first $30,000 (approximately) of income, 26 percent for the next $30,000 and 29 percent for income above $60,000. As well, a high-income surtax of 5 percent applied to federal tax in excess of $15,500, for a total tax rate of 30.45 percent at the highest income level.[10]

US federal marginal tax rates vary by income and whether the taxpayer files as married, single, joint, or head of household. The lowest rates are 15 percent on taxable income up to amounts in the range of approximately US$21,500 (married separate return) to US$43,000 (married joint return). A middle-income rate of 28 percent applies to the next income tranche, which ranges as low as approximately US$21,500 to US$52,000 (married, separate return

10 See Arthur Andersen 2000. In its February 2000 budget and minibudget of October 2000, the federal government reduced personal income tax rates, abolished the high-income surtax, and introduced four income brackets: 0 to $30,000 (16 percent rate), $30,000 to $60,000 (22 percent rate), $60,000 to $100,000 (26 percent rate), and incomes over $100,000 (29 percent rate). The changes begin in 2001.

filing) to as high as US$43,000 to US$104,000 (married, joint return filing). Two other rates, 31 percent and 36 percent, apply to income in excess of these amounts prior to the application of the top rate. The top rate of 39.6 percent applies to taxable income in excess of approximately US$141,500 (married, separate return) and US$283,000 (single, head of household, and married joint returns).[11]

Subnational-Level Personal Income Taxes. The personal income tax rates of Canadian provinces tend to be much higher than the effective rates levied by US states and municipalities. Currently, most Canadian provinces are adjusting their effective rates as they switch to a system of collecting tax on income, rather than tax on federal tax paid, so a number of rate changes have occurred or are planned to occur soon. The 2000 rates for high-income taxpayers varied from approximately 15 percent in Alberta[12] (the combined federal and provincial top rate was 43 percent) to about 21 percent in British Columbia and Newfoundland (the combined federal and provincial personal tax rate was 51.3 percent).

In the United States, personal income taxes paid to states and municipalities are deductible from federal tax. The tax rates for high-income taxpayers vary from 0 percent to 12 percent by state, and municipal rates are 1 percent or less (an exception is New York City at over 4 percent). The combined state/municipal personal income tax rate is less than 4 percent for high-income taxpayers, taking into account the deductibility of subnational taxes from federal taxes. Generally, combined federal and state/municipal rates in the United States are about 43 percent for high-income taxpayers.

Social Security Payroll Taxes. Social security taxes tend to be lower in Canada than in the United States. Canadian payroll taxes include

11 Recent tax reform in the United States will also lower personal tax rates over the coming ten years. See Chapter 5 for further discussion.

12 Alberta has since adopted a single-rate tax of 10 percent on all taxable income. The combined federal and provincial rate is 39 percent as of 2001.

employer and employee contributions to the Canada and Quebec Pension Plans (CPP/QPP). Contribution rates in 2000 for the plans were 3.9 percent each for employers and employees up to approximately $34,000 (planned to rise to almost 5 percent in the next five years).

US social security taxes, which apply to employers and employees equally, were almost 15.4 percent on the first US$72,600 in earnings; the amount assessed included a Medicare levy of 2.9 percent on all earnings. US social security taxes are likely to rise over the next several years.

(Un)Employment Insurance and Workers' Compensation Payroll Taxes. Canadian payroll taxes for federal EI and provincial workers' compensation programs are generally higher than similar US payroll taxes. EI contributions in 2000 were 2.4 percent for employees and 3.36 percent for employers for annual earnings up to $39,000. Provincial workers' compensation programs vary by province and are often based on the experience that firms or industries have had with claims for injury. The average rates that apply to payrolls up to weekly maximums vary from 1.1 percent in Alberta to 3.24 percent in Newfoundland.

In the United States, workers' compensation programs are generally privately provided. US unemployment insurance rates vary by state and are related to the firm's layoff experience. Contributions to state unemployment insurance schemes are creditable against a federal unemployment insurance tax that applies at a rate of 6.2 percent on the first US$7,000 of earnings.

General Payroll Taxes. Four Canadian provinces (Manitoba, Ontario, Quebec, and Newfoundland) levy employer-paid general payroll taxes (often referred to as education and health care taxes, although the funds are not earmarked for these programs). The top rates vary by province from 1.95 percent in Ontario to 4.26 percent in Quebec; they also vary according the size of payroll. Quebec has an additional manpower training tax of 1 percent on payrolls in excess

of $250,000, with the amount owing being reduced by expenditures on training. There are no general payroll taxes in the United States.

Sales and Excise Taxes. Sales and excise taxes in Canada are generally higher than those assessed in the United States. In Canada, general sales taxes include the federal goods and services tax (7 percent rate), a harmonized sales tax (a federal-provincial joint tax of 15 percent in New Brunswick, Nova Scotia, and Newfoundland), and provincial sales taxes (an average of about 8 percent in the remaining provinces except Alberta). Federal and provincial excise taxes apply to several kinds of goods, including liquor, tobacco, fuel, jewelry, and transportation.

US state and municipal governments levy sales taxes at an average rate of 7 percent (estimated by Ring 1999). Fuel taxes and other selective excise taxes are also levied. As a proportion of consumption, the average sales and excise tax rate is estimated to be 14.5 percent in Canada and 7.2 percent in the United States.

Taxbacks. Both the United States and Canada provide certain benefits, such as for children and welfare, that are taxed back as the person or family earns more income.[13] The effect is to increase marginal tax rates significantly. In Canada, clawbacks apply to child tax benefits, old age security, the guaranteed income supplement for the elderly, the aged credit, the GST credit, child care subsidies, and social welfare programs. These rates can increase combined federal and provincial marginal tax rates on income substantially — in some instances, to more than 100 percent.

US taxback rates apply to a number of support programs, including cash supplements for the poor, Medicaid for children, food stamps, housing, and income supplements for families with disabled children. For example, the earned income tax credit is

13 See Poschmann and Richards (2000) for a review of clawback rates in Canada. See Haveman and Wolfe (1999) for a discussion of US taxback rates for social programs.

taxed back at a 20 percent rate, so it does not apply to income in excess of US$28,500.

US and Canadian Benefit Programs Compared

Taxes are not the only part of public policy that affects labor markets. A number of public programs implicitly improve the compensation paid to workers in both the United States and Canada. These include the following.

Social Security. Contributions to the CPP/QPP are assessed to support retirement benefits. Benefits for the current elderly generation are paid from the accumulated payroll contributions of current and past working generations and the plan's investment earnings since 1967. A recent reform of the CPP/QPP included increases in contribution rates, market-based investment criteria for trust funds, and some cutbacks in benefits; the reform was undertaken to ensure that the plans would be better balanced over time. The payroll tax increases will cover future liabilities as well as the interest cost of unfunded liabilities arising from members of the existing population, who have paid less into the plan than the benefits they are receiving. Thus, especially for younger workers, the benefits paid out are less than the amount of contributions paid in by the working population over time.

The United States is considering similar reforms because its social security trust funds are insufficient to pay for all benefits to be received by the elderly in future years. Thus, in the future, US workers' contributions are likely to rise to cover the cost of social security benefits in later years. For the calculations, I assumed that current workers in both countries pay payroll taxes roughly matching future benefits.

Employment Insurance and Workers' Compensation. In Canada, employee and employer contributions pay for layoff, parental leave, and sickness benefits. At present, the program is in surplus (contributions are well in excess of benefits). Thus, the surplus rep-

resents a payroll tax on labor. Further, contributions are not related to the experience that firms have with layoffs. Therefore, industries may pay more or less in contributions than the benefits their workers receive. The excess contributions represent a tax and the excess benefits a subsidy. In contrast, provincial workers' compensation programs are generally experience related.

In the United States, unemployment insurance is partly experience related and almost balanced.

Health Care. An important subsidy for workers in Canada but not in the United States is for health care. Canadian public programs provide almost 70 percent of the cost of health care, including full coverage of primary services and partial coverage of certain other expenditures, such as for drugs. Further, in Canada, private supplemental benefits provided by employers are untaxed benefits for employees.

The most important public health care expenditures in the United States are through the Medicare and Medicaid programs. The former covers the health care costs incurred by the elderly and the latter those incurred by the poor, primarily those who are not working. (For a comprehensive review of Medicaid, see Gruber 2000.) US governments also provide funding for government personnel and eligible community hospitals. Over half of health care expenditures in the United States are covered by privately provided insurance. Moreover, workers receive a significant benefit in that employer-provided health care insurance is not a taxable benefit.

Education. Public benefits in Canada for education are more than those found in the United States. Canadian governments fund over 80 percent of the costs of primary, secondary, and tertiary education (OECD 1999). The public sector covers most primary and secondary education costs without user charges. Postsecondary education is partly financed by tuition fees paid by students, with rates varying by province (for example, about one-third of postsecondary costs in Ontario are funded by tuition fees).

In the United States, over 70 percent of total education costs are funded by the public sector (ibid.). Postsecondary institutions are either publicly or privately operated with significant public funding of bursaries and scholarships.

Effective Tax Rates on Labor

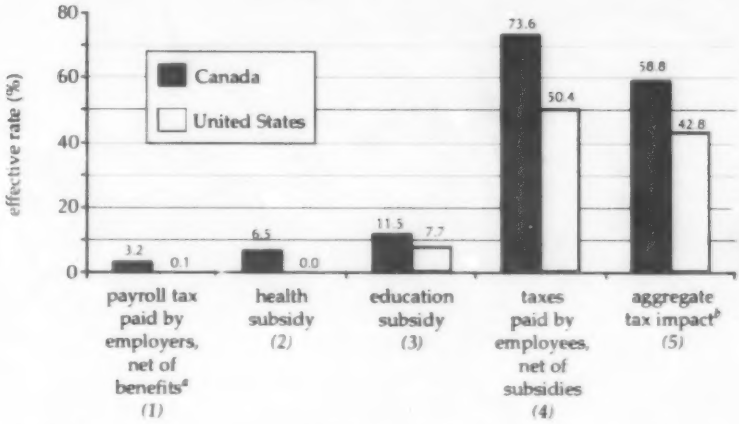
Figure 21 provides estimates of the effective tax net-of-subsidy tax rates on labor, taking into account the significant differences between Canadian and US taxes and subsidies. The graph shows aggregates of the industry-by-industry measures reported in Table 3. Calculations are provided for employer payroll taxes, net of social insurance, health care and education[14] subsidies provided workers through publicly funded programs, and taxes paid by employees net of subsidies (such as the nontaxable benefits from employer-provided health insurance). Since what is being measured conceptually is the impact of net taxes as they add to the cost of production, rates are expressed as a percentage of the net wage received by employees. Calculations are based on average earnings per employee by industry in Canada and the United States.[15]

The estimates take account of only taxes and subsidies that affect the productivity of the working population. Thus, for example, health subsidies that improve the productivity of workers are included, and subsidies for the nonworking elderly and poor are

14 Education subsidies include primary, secondary, and tertiary subsidies from public expenditures. To calculate the effective subsidy rate, I constructed a model assuming the present value of additional income received in future years is equal to the cost of additional education. Subsidies and the tuition fee reduce the cost of education and taxes reduce the return to education. Education property taxes are not included in the analysis. The theoretical derivation is available on request.

15 Calculations have also been made using a weighted sum of tax rates in each industry based on the distribution of employees by wage earnings. Although these calculations provide a more exact measurement of effective tax rates within each country, the data on the distribution of worker salaries are neither always consistent nor important in determining the overall effective tax rate by industry.

Figure 21: ***Effective Rate of Taxes and Subsidies on Net-of-Tax Earnings, Canada and the United States, 2000***



[a] Net-of-tax earnings — wages and salaries paid in the absence of taxes and earnings.

[b] Estimated as (1) + (4) – (2) – (3).
See Table 3 for an industry breakdown.

Source: University of Toronto, International Tax Program.

ignored. However, education subsidies that increase the human capital of the working population are included. Tax benefits related to education savings plan programs in the United States and Canada are not included in estimates of personal tax rates or education subsidies. Also, I made no attempt to include the effect of income tax progressivity on the return to human capital investment if, as a result of training, people earn greater income, which is taxed at a higher marginal rate.

To be clear on the calculation method, consider the following example. Suppose workers hired in an industry are paid an average of $20 per hour, in the absence of taxes and subsidies. Suppose employer and employee taxes are levied at a rate of 50 percent, adding $10 per hour to the cost of hiring labor for the business. If subsidies for health care and education equal 20 percent of net wages, they save businesses $4 (25 percent of $20) on each hourly

Table 3: ***Tax and Subsidy Rates for Labor by Industry, Canada and the United States, 2000***

	Employer Payroll Tax Net of Benefits		Education Subsidy		Health Subsidy		PIT Plus Employee Net Payroll and Sales Taxes[a]		Effective Tax, Net of Subsidy, on Labor[b]	
	Canada	US	Canada	US	Canada	US	Canada	US	Canada	US
					(percent)					
Forestry	–7.1	0.2	9.7	7.9	14.7	0.0	63.0	51.6	31.5	43.8
Mining	4.1	–0.4	8.5	5.6	6.4	0.0	83.6	52.5	73.2	46.6
Oil and gas	2.0	–0.4	5.2	5.6	9.4	0.0	80.6	52.5	68.2	46.6
Manufacturing	4.6	–0.6	10.3	7.3	4.8	0.0	80.0	54.9	70.2	47.0
Construction	–0.8	0.7	10.6	9.2	11.6	0.0	69.8	49.6	46.8	41.1
Transport	5.1	0.5	11.1	8.4	6.9	0.0	79.4	51.7	65.7	43.8
Communications	7.1	0.5	11.3	6.0	6.2	0.0	81.0	53.7	70.6	48.2
Utilities	7.8	0.4	9.2	5.4	2.7	0.0	87.0	53.9	82.9	48.8
Wholesale trade	6.0	0.7	12.1	7.2	2.7	0.0	81.6	53.0	72.8	46.4
Retail trade	3.8	0.4	22.1	13.7	4.7	0.0	51.5	30.6	28.5	17.0
Other services	3.6	0.1	15.8	8.9	1.7	0.0	52.8	50.9	38.9	42.1
Average	3.2	0.1	11.5	7.7	6.5	0.0	73.6	50.4	58.8	42.8

[a] PIT refers to personal income tax. Net payroll tax on employees is gross payroll tax net of social benefits.

[b] Aggregate of taxes and subsidies. All numbers expressed as net of tax and subsidy wages.

Source: University of Toronto, International Tax Program.

wage. Thus, the firm's net cost of labor is $26, and the income the worker received, net of all taxes and subsidies, is $20. The total effective tax rate is therefore 30 percent ($6 ÷ $20).

These calculations, which are based on the distribution of wages in each industry, suggest the following.

- The aggregate effective employer payroll tax, net of social security, unemployment insurance, and workers' compensation benefits, is about 3.2 percent of net-of-tax wage costs in Canada and only 0.1 percent in the United States. The Canadian employer payroll tax reflects the surplus in the EI account as well as provincial general payroll taxes. For the United States, a small surplus on business contributions is associated with unemployment insurance, which is not fully experience-rated. As stated above, for both countries, I assume that social security and workers' compensation programs are approximately balanced in that contributions match benefits.
- Canada provides a significant health care subsidy to the working population (ages 18 to 64) of about 6.5 percent of net-of-tax earnings.[16] US health care subsidies are negligible since Medicare and Medicaid programs primarily benefit the nonworking population.[17]

16 In 1998, employees received about 1.1 percent of gross salaries as employer-provided health insurance in Canada. Combining this amount with public subsidies, one can calculate the total private and public health care benefits for employees at about 8.0 percent of earnings. This percentage is somewhat less than US employer-provided benefits, which are about 8.7 percent of gross salaries. I made no attempt to correct for price and quality differences between the two systems.

17 In the absence of Medicare, US employees would need to save part of their income to cover the costs of medical expenses after retirement. With publicly funded Medicare, one could argue that, in principle, the benefits received in later years provide a subsidy to the current working population. But my calculations here ignore that subsidy since taxes must be paid to cover future Medicare costs. For example, the 2.9 percent payroll tax for Medicare is placed in trust funds that are used to cover the costs of Medicare for retirees. The program thus operates similarly to Social Security in the United States.

- Canada provides an education subsidy that is about 11.5 percent of annual net income; in the United States, in contrast, the education subsidy is 7.7 percent of annual net income.
- Personal income taxes, sales and excise taxes, employee payroll taxes (net of benefits), and the nontaxable benefits of employer-provided health care as a proportion of net income are significantly higher in Canada (73.6 percent) than in the United States (50.4 percent).[18]

In general, the rate for the average Canadian effective tax, net of subsidies, is significantly higher than the equivalent US rate: the aggregates are 58.8 percent and 42.8 percent, respectively. In many industries, especially mining, oil and gas, manufacturing, communications, utilities, and wholesale trade, Canadian effective tax rates on labor are substantially higher than US rates. Thus, despite the advantages Canada provides in education and health subsidies, the tax disadvantage for labor is far greater here than in the United States.

Taxes and Subsidies on Capital Costs

Not surprisingly, taxes and subsidies have a significant impact on the investment decisions of businesses. By taxing the profits that owners receive on capital investments or the fruit of capital costs, government takes a significant share of income from businesses. Most recent studies on capital investments show that taxes significantly reduce the incentive to invest in a country.[19] Variations in

18 Kesselman (2000) suggests that marginal personal income and payroll taxes are similar in the United States and Canada. However, he ignores sales taxes in terms of their impact on labor supply. Sales tax rates are significantly higher in Canada.

19 Studies that rely on cross-section and time series panel data sets for firms show that taxes significantly affect investment decisions. The estimates of the impact vary widely. See, for example, Mintz (1995a); Hines (1999) on foreign direct investment; and Chirinko and Meyer (1997). Most studies fail to incorporate business subsidies for capital.

effective tax rates across industries also reduce productivity and competitiveness. Thus, capital taxation and subsidies can be expected to have an important impact on comparative advantage, productivity, and competitiveness.

As when dealing with taxes and subsidies on labor, analysts face the issue of how best to measure the effective net-of-subsidy tax rate that impinges on capital decisions.[20] In recent years, most economists have measured the effective tax rate on capital as a *marginal* rate: the amount of tax paid as a percentage of the income earned on the last dollar of capital investments.[21] This *marginal effective tax rate on capital* is based on the notion that a business must earn a sufficient net-of-tax return to attract investment funds from their owners. For example, if investors require a 5 percent rate of return on capital for financing and if taxes paid are 5 percent of investment costs, then the required rate of return on investment, gross of taxes, is 10 percent (5 percent net-of-tax return + 5 percent return to cover taxes).

An alternative measure of the effective tax rate is to calculate taxes paid as a percentage of the profits earned by the firm, or the *average tax rate*, as in the case of project analysis (see, for example, Brewer, Bergevin, and Arseneau 1997). This approach requires specification of a representative project, including measurement of rev-

20 Some analyses measure effective tax rates simply as corporate income taxes paid as a percentage of the annual income for the whole company. A number of empirical studies use this approach to estimate the impact of taxes on investment (for example, Altshuler, Grubert, and Nelson 2000). However, this methodology is flawed. First, such analyses ignore other taxes, such as capital taxes, that affect investment decisions. Second, average tax rates measured in this way are not stable over time and depend on the investment decisions of businesses. For example, if firms are growing, they claim more investment tax credits and accelerated depreciation in a year, thereby reducing the average rate of tax that depends on investment decisions. These studies tend to bias upward the impact of taxes on investments. (See Mintz 2000.)

21 See King and Fullerton (1984) and Boadway, Bruce, and Mintz (1984), who were the first to use the marginal tax rate for the analysis of tax effects on investment. A comprehensive survey can be found in Boadway (1987) and McKenzie and Mintz (1992).

enues anticipated in the future. It is appropriate if a business is looking to locate large projects in either one country or another. Because taxes as a percentage of income vary over the life of a project, the analyst must calculate the present value of its taxes and income over time (perhaps converting them to an annualized basis).

The calculations reported below use the marginal effective tax rate approach, following the methodology developed in the past two decades and recently used in the report of the Technical Committee on Business Taxation (Canada 1998).

How Do US and Canadian Capital Taxes and Subsidies Stack Up?

The most relevant taxes that directly affect investment include corporate income taxes, capital taxes (taxes on assets values), sales and excise taxes on capital inputs, and industrial and commercial property taxes. Capital subsidies provided by governments include grants and tax credits for investment, including R&D, and infrastructure subsidies. The analysis below incorporates all these elements of expenditure and tax systems (except property taxes, which I ignore for the reasons given above).

US and Canadian Taxes on Investment Compared

The most salient differences in the taxes applied in Canada and the United States are the following.

Corporate Income Taxes. Canadian corporate tax rates in 2000 were generally higher than those found in the United States for large businesses. In Canada, the general federal rate was 28 percent and a corporate surtax of 4 percent of federal tax payable was applied, making the overall federal rate 29.12 percent. The average general provincial rate was about 14 percent. The combined Canadian federal-provincial general corporate income tax rate was 43 percent. The federal and provincial governments also provided a rate reduction for manufacturing and processing income so that the

combined rate was about 36 percent.[22] The tax payable on income was further reduced by special writeoffs, such as accelerated depreciation and tax credits for qualifying investments in R&D and resource and manufacturing investments in the Atlantic region.

In the United States, the combined federal and state tax was about 39 percent, taking into account a federal rate of 35 percent and average rates of 7 percent for state taxes, which are deductible from federal tax. As in Canada, the tax payable by US businesses was reduced by certain writeoffs for capital investments, including accelerated depreciation and a credit for incremental R&D expenditures.

Capital Taxes. Canadian governments rely much more on capital taxes — taxes assessed on the value of corporate assets — as a source of revenue than do those in the United States. Ottawa levies a large-corporations tax at 0.225 percent of Canadian taxable capital in excess of $10 million, although this tax is reduced by the amount of corporate surtax payable on income. It also levies special capital taxes on financial institutions. Most provinces levy capital taxes on shareholders' equity and most debt of nonfinancial businesses in excess of thresholds; the rates vary from as low as 0.25 percent (Nova Scotia) to as high as 0.64 percent (Quebec). Provincial capital taxes on financial institutions (with "capital" defined as shareholders' equity plus corporate bond liabilities) vary from 1.55 percent in Quebec to 4.0 percent in Newfoundland, for capital in excess of various thresholds.

22 The federal government, Ontario, and Alberta plan to lower their corporate income tax in the next five years. Federal rates are to fall by 7.0 points and Ontario and Alberta rates by 7.5 points. By 2005, manufacturing and non-manufacturing income will be taxed at the same rate at the federal level and in Alberta and Ontario (as well as Quebec). Resources profits, however, may continue to be subject to a tax rate of 28 percent at the federal level. At the time of writing, the federal and provincial governments were discussing the tax treatment of the resources sector. British Columbia and New Brunswick have also announced corporate income tax rate cuts, of 3.0 and 1.0 percentage points, respectively.

The United States has no capital tax at the federal level but some franchise fees at the state level. Both countries impose property taxes on nonresidential real estate and, some states and, to lesser extent, provinces, tax other business assets, such as machinery and inventory.

Sales Taxes on Capital Inputs. In both Canada and the United States, sales taxes on business capital are generally a result of its not being exempt from retail sales taxes. Canadian and US studies (Mckenzie, Mansour, and Brulé 1997; Ring 1999) report the effective sales tax rate on capital goods at about 3.0 percent in Canada and 4.2 percent in United States. US states are less likely than Canadian provinces to provide businesses with exemptions from retail sales taxes, even though the rates are generally higher in Canada.

US and Canadian Subsidies for Business Compared

Governments in both Canada and the United States provide several important subsidies for businesses, including tax credits and grants for R&D and subsidies for infrastructure (such as highways, water, roads, port facilities, and airports). A portion of infrastructure costs is recovered by government user charges.

Research and Development. Public support for R&D is significant in both Canada and the United States. Canadian support includes federal and provincial R&D tax credits or allowance programs. The federal credit is 20 percent for large companies and 35 percent for small businesses. Provincial tax credits and allowances are in addition to federal ones in each province. (For a description of federal and provincial programs see Canada 1998, chap. 5.) The credits and allowances reduce the cost of business research expenditures that can be expensed. On the other hand, grant programs for R&D are less important in Canada. The federal and provincial governments directly fund pure research at universities and government agencies and about 7 percent of business enterprise research expenditures.

In the United States, research and development tax credits are less important than those found in Canada. The US federal government provides a 20 percent credit for incremental research and development (R&D in excess of past R&D performance and sales). The estimated effective rate is 10.5 percent. However, US governments are more generous than their Canadian counterparts in providing much more significant grant support for research and development — about 16 percent of research expenditures.

Infrastructure Expenditure. As already noted, Canadian governments have generally spent more public funds on infrastructure than have US governments. For each country, I used information on the business sector use of inputs to determine how public infrastructure expenditures that are treated as capital affect firms.[23] Table 4 provides estimates of the subsidies by industry. In most cases, including communications, infrastructure expenditures have been higher in the United States than in Canada.

Effective Tax Rates on Capital

How do taxes and subsidies affect capital investments? Figure 22 presents the effective tax rates on capital, excluding grant subsidies for R&D and infrastructure, for 2000.[24] The composite rates graphed include corporate income taxes, capital taxes, and sales taxes on business inputs, and they take account of differences in

23 The value of public infrastructure as part of the composition of capital used by businesses was estimated using the input-output data of each country. I computed the share for each industry according to the appropriate value-added weight. I then treated this expenditure as a capital expenditure and combined it with other business investment expenditures to estimate shares of capital stock. The public infrastructure expenditures used here exclude those associated with governments' own-use buildings. (In contrast, the amounts reported in Chapter 3 include both business-use and own-use infrastructure spending.)

24 These calculations are consistent with those of the Technical Committee on Business Taxation (Canada 1998).

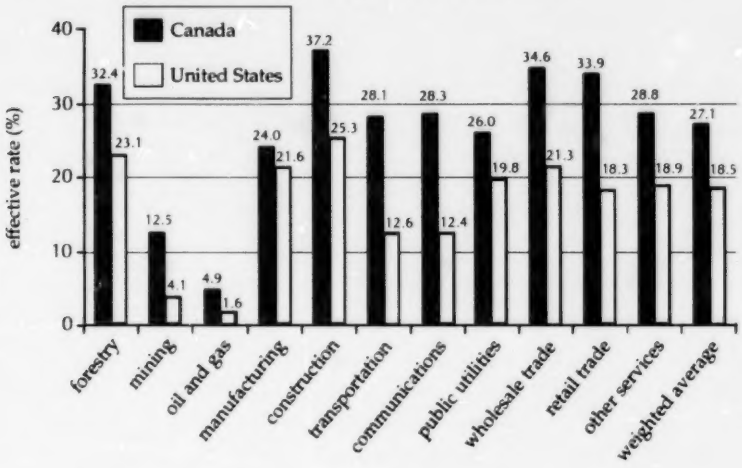
Table 4: ***Infrastructure Subsidy Rates by Industry and Major Capital Type, Canada and the United States, 2000***

	Canada		United States	
	Land and Structures[a]	Machinery	Land and Structures[a]	Machinery
	(% of business capital)			
Forestry	3.0	2.0	3.2	1.7
Oil and gas	1.1	0.8	1.2	0.7
Mining	5.7	4.6	7.9	4.8
Manufacturing	6.0	1.3	5.2	0.9
Construction	2.0	5.1	3.0	5.8
Transportation	12.3	1.1	16.5	1.2
Communications	1.2	1.1	3.5	1.8
Utilities	2.0	2.0	3.5	2.6
Wholesale trade	15.6	6.1	8.6	2.4
Retail trade	16.5	4.0	7.5	1.3
Business services	2.1	4.2	0.8	1.1
Aggregate	4.4	1.7	4.5	2.8

[a] Excludes infrastructure expenditures on government buildings.

Source: University of Toronto, International Tax Program.

Figure 22: *Effective Tax Rate on Capital Investment, by Industry, Canada and United States, 2000*



Source: University of Toronto, International Tax Program.

Canadian and US tax provisions for capital cost writeoffs and investment tax credits.

For all sectors, Canadian effective tax rates on capital were higher than those found in the United States. The aggregate effective tax in Canada in 2000 was 27.1 percent while it was 18.5 percent in the United States. The most significant differences — greater than 10 points — between the US and Canadian rates were for construction and the services sectors (the latter include transportation, communications, public utilities, wholesale trade, retail trade, and other services). These results suggest that Canadian governments tax capital more highly than their US counterparts, and that the effective rates have been particularly high for the services sectors of the economy. As the Technical Committee on Business Taxation (Canada 1998, 3.3) notes in its report, this country's high effective tax rates on services industries relative to those of the United States undermines growth in knowledge-based activities that are critical to innovative activity.

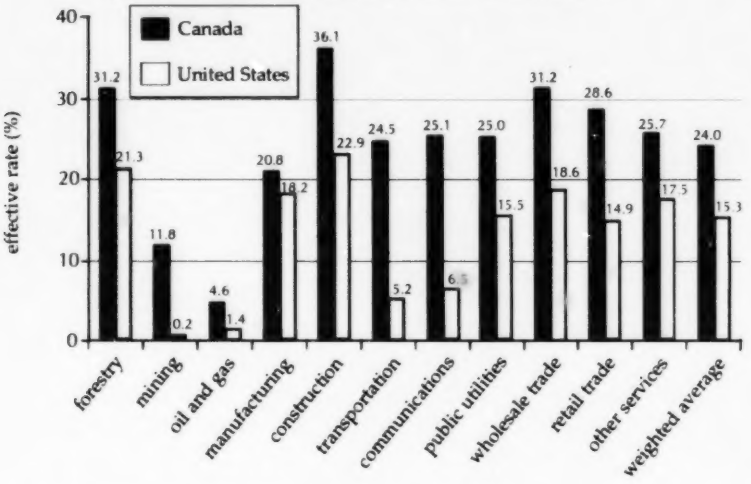
Further, neither the US nor the Canadian corporate tax system is neutral: differences in effective tax rates across industries are significant. However, the variation of effective tax rates is greater in Canada, suggesting that its system favors some business activities more than others. Such nonneutralities undermine Canada's comparative advantage and productivity. In Canada, mining, oil and gas, and, to a lesser extent, manufacturing have been more favorably treated. Similarly, the United States has provided more favorable treatment to traditional industries such as mining, and oil and gas.

An interesting difference between the two countries is in their tax treatment of communications and transportation, two sectors closely related to the "new economy." (Telecommunications is now a large part of the communications sector. Transportation is important since the movement of tangible goods by truck, rail, and air is complementary with new methods of distributing products through Internet communications.) The United States has seen quite favorable growth rates in these two industries in the past decade, while Canada has taxed them more highly than some other industrial sectors.[25]

Figure 23 presents the effective tax rates on capital, net of infrastructure and R&D subsidies, by industry for 2000. Netting out these subsidies does little to change the overall conclusions made above. The effective tax rate on capital, net of R&D grants and infrastructure subsidies, drops from 27.1 to 24.0 percent in Canada and from 18.5 to 15.3 percent in the United States. However, Canadian-US differences become more pronounced for some industries, especially for communications and transportation where US infrastructure subsidies are greater.

25 As noted in Chapter 5, recent federal and provincial measures to reduce corporate taxes should go some way toward improving the position of Canadian industries by making the business tax system more neutral and competitive.

Figure 23: ***Effective Tax Rate on Capital Net of Subsidies for R&D Grants and Spending on Infrastructure, by Industry, Canada and the United States, 2000***



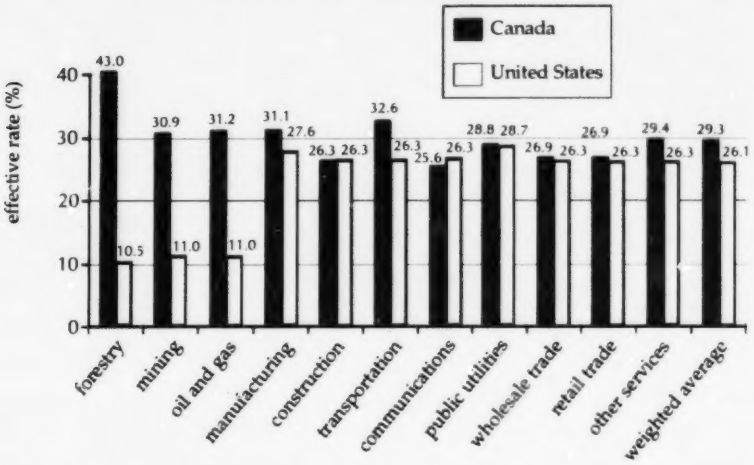
Source: University of Toronto, International Tax Program.

Support for Innovation in Canada and the United States

Given the importance of R&D for innovation, I compared the United States and Canada for the overall tax and grant support they give. Taking into account the tax on the return earned on research activities, the expensing of research capital for tax purposes, and the tax credits and research grants available to businesses, Figure 24 compares the effective subsidy rate for qualifying R&D for Canada and the United States.

In general, Canadian governments provide somewhat greater support for R&D than US governments; the Canadian effective subsidy equals to 29.3 percent of costs while the US rate is 26.1 percent. Although not shown in the chart, tax support in Canada comprises 80 percent of the total public subsidy, while tax support in the United States is only 40 percent of the total.

Figure 24: ***Effective Subsidy Rate for R&D, by Industry, Canada and the United States, 2000***



Source: International Tax Program, University of Toronto.

In most industries, Canadian support for R&D is higher than US support (the possible exception being communications). The two countries differ little in the subsidy rates for wholesale trade and public utilities.

One of the puzzles policymakers face is that R&D expenditure in Canada is relatively low even though public support for business research is among the highest in the major industrialized countries (Canada 1998). For example, in 1997, Canadian R&D was 1.64 percent of GDP (OECD 1999) compared with 2.62 percent in the United States.[26] Further, Canada significantly lags the United States in research for product development, although the intensity of our cost-reduction research is similar to that south of the border (see Trefler 1999; Fortin 1999).

26 Some people argue that R&D is more likely to take place in large countries than in smaller ones. However, R&D spending as a proportion of GDP is similar to or higher than the US ratio in Finland, South Korea, Norway, Sweden, and Switzerland, whose economies are all smaller than Canada's (OECD 1999).

Perhaps the explanation of this puzzle is as follows. Although R&D is an important activity leading to technological development, it accounts for only a small part of total capital investment in the business sector. Therefore, R&D subsidies have only a minimal impact in reducing the effective tax rates on capital. Other parts of the tax system have a significant effect on the *demand* for R&D, thereby affecting the degree to which innovation takes place in Canada (McKenzie 1999). Generally, the high effective tax rates on business investments can reduce the incentive to adopt innovations in Canada, even though public support for the creation of ideas is greater here than in the United States. This observation is consistent with economic data suggesting that Canadian businesses have been better at cost-reducing innovations than at product development that is complementary with other production and distribution business activities at later stages of production (Trefler 1999). Were Canada's taxes less punitive in their impact on business investments, there would probably be more production here that made use of innovations and, therefore, greater demand for research, particularly related to product development.

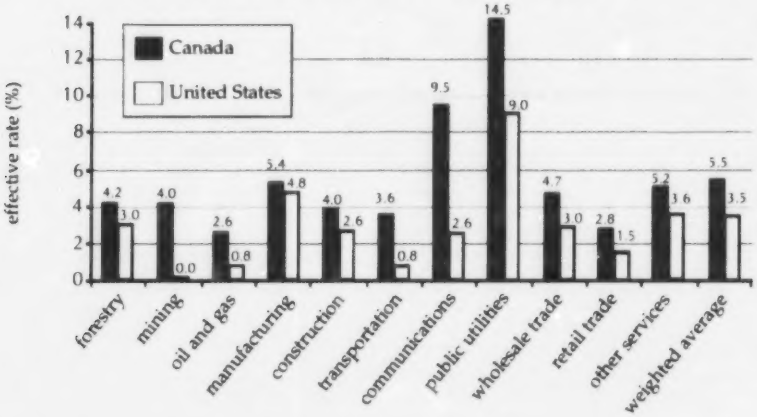
Putting It All Together: The Effective Tax Rate on Costs

The analysis contained in this chapter has shown that effective tax rates, net of subsidies, were higher for labor and for capital in Canada than south of the border in 2000.

Given that production primarily depends on the use of labor and capital, it is not surprising that public policies in Canada tend to contribute to our higher business costs. This section considers how much of a difference these policies make.

Figure 25 displays the effective tax rates on costs, net of subsidies, for Canadian and US industries in 2000. These estimates are based on the assumption that taxes on and subsidies for labor costs were fully shifted onto workers through lowering the wages firms paid and thus had no impact on the cost of doing business in Canada. Given this assumption, the average effective tax rate on busi-

Figure 25: ***The Cost of Doing Business: The Effective Tax Rate Net of Subsidies, Excluding Taxes and Subsidies on Labor, by Industry, Canada and the United States, 2000***



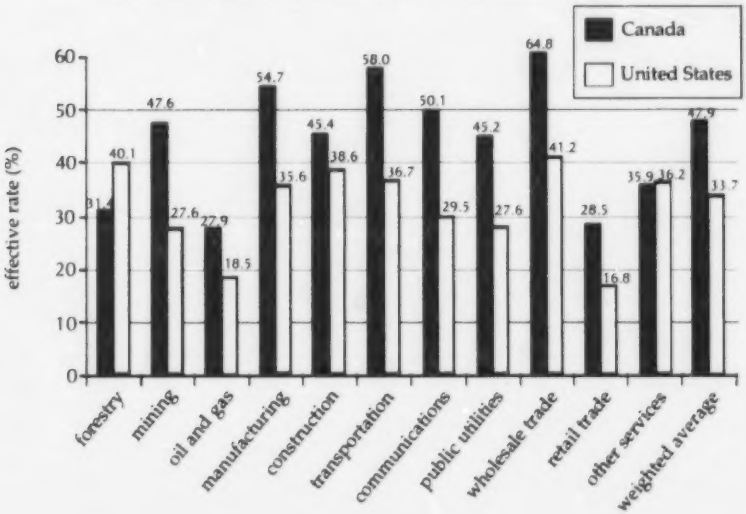
Source: University of Toronto, International Tax Program.

ness costs was 5.5 percent in Canada and 3.5 percent in the United States. The rates varied by industry, and were larger here than in the south in all sectors. In Canada, they were especially high in the services sectors and lowest for resource firms.

Figure 26 repeats the picture of the effective net-of-subsidies tax rates on costs, but the calculations included taxes on both capital and labor. And they assumed that all taxes were fully shifted forward as higher wage costs, adding to the cost of production for businesses. The US-Canadian difference becomes even greater: the average effective rate in Canada was 47.9 percent and 33.7 percent in the United States. Be aware that Figures 25 and 26 present extreme cases. Dahlby (1992) suggests that 70 percent of payroll taxes tend to be shifted back onto labor. One can easily approximate this perhaps more likely case by taking weighted averages of the two numbers in both charts.

Regardless of the shifting assumption, my calculations lead to two important conclusions.

Figure 26: ***The Cost of Doing Business: The Effective Tax Rate Net of Subsidies, Including Taxes and Subsidies on Labor, by Industry, Canada and the United States, 2000***



Source: University of Toronto, International Tax Program.

- Canadian governments impair competitiveness of the business sector. Even though subsidies, especially for labor, are higher in Canada than in the United States, the Canadian tax disadvantage is much greater, swamping any gain from subsidies. Perhaps this should not be entirely surprising. As discussed in Chapter 3, a substantial portion of taxes paid in Canada cover expenditures that are not productivity-enhancing, such as public debt charges.
- The tax/subsidy system is far from neutral in both countries, thereby impairing their comparative advantage and productivity. Thus, Canada's tax/subsidy regime is a barrier to growth.

To appreciate the effect that public policies can have on the productivity and competitiveness of the economy, one can translate the aggregate effective tax rate differences into their impact on the

Canadian-US exchange rate. Recall that that rate is determined in the long run as the ratio of the prices of goods and services sold in each market. For competitive businesses to cover their costs of production, the prices of goods and services must equal those production costs plus taxes, net of subsidies. If gross prices, which reflect taxes and subsidies, are higher in Canada than in the United States, the exchange rate depreciates until the prices are equal in each country as expressed in the currency of one of them. Thus, if Canada has the higher effective tax rate on costs, then the Canadian dollar will fall in value relative to the US dollar in order for trade to take place. Given the assumption that about 30 percent of taxes and subsidies on labor are shifted forward, the numbers presented in Figures 25 and 26 imply that the Canadian dollar valued in US dollars is suppressed to a level that is 95 percent below where it would be if the effective tax rates on costs were the same in the two countries.[27] If Canada lowered its rates to the level found in the United States, the Canadian dollar would rise in the long run by an estimated US $0.04. That higher value for the Canadian dollar would mean that Canadians' incomes could buy more foreign goods and services. In terms of purchasing power, Canadian GDP would increase by $1,500 per year, per capita or $6,000 for a family of four.

GDP would also increase if Canada made its tax/subsidy system neutral across business activities. Current policies encourage entrepreneurs to choose activities not solely on the basis of sound economic criteria. Instead, they look for activities that reduce taxes paid to or increase handouts from the federal and provincial governments. One estimate (Canada 1998, chap. 3) suggests that making the corporate income tax system neutral would increase GDP

27 The exchange rate, denoted as e for the Canadian dollar in US dollars, equals $P(1 + t)/P^*(1 + t^*)$ with P denoting producer prices, t origin-based excise tax rates on producer prices, and * values the price and tax rate for Canada (values without an asterisk apply to the United States). With 30 percent of labor taxes shifted forward, new calculations (not in the charts) estimate Canada's effective tax rate on costs as $t^* = 0.23$ and the US rate as $t = 0.16$. The exchange rate is approximately 0.95, a level at which origin-based tax rates would be equalized.

by 15 percent of corporate tax revenues, which would be about $6 billion per year — $200 per capita, or $800 for a family of four.

Finally, existing tax and grant support for R&D gives Canadian businesses only some advantages relative to their US counterparts. And these advantages can be more than offset by the higher taxes firms pay if they adopt innovations in Canada. Thus, the lack of R&D activity in Canada relative to the United States can be explained by perverse tax/subsidy policies that provide significant support for the creation of ideas but offsetting deterrence for the adoption of ideas in Canada.

Thus, significant gains would be possible if Canada's tax/subsidy system were made more competitive and neutral.

Conclusions

Overall, the analyses of Chapters 2, 3, and 4 provide disturbing conclusions. Canadian governments are creating disadvantages, rather than advantages, for higher growth. Even though they provide relatively high subsidies for education, health care, and to a certain extent, infrastructure and R&D, which reduce the cost of doing business, these benefits are far less than the taxes borne by capital and labor. The list of disadvantages is lengthy.

- Canadian governments are much larger today than in earlier years, commanding over two-fifths of the economy. That growth in government reflects fiscal mismanagement, rather than wise fiscal decisions that have led to better productivity.
- More than a quarter of spending is for interest expenses on gross public debt and for inefficient programs, such as regional development, employment insurance, and job creation grants, that have reduced, rather than improved, economic performance.
- Canadians face a burden of taxes and fees much higher than they did in the 1960s. Government revenue as a percentage of GDP rose from 30 percent of GDP in the 1960s to 43 percent in the late 1990s.

- Canada's tax burden, especially on capital, is higher than that found in the United States or a number of other countries, including Sweden, Finland, the Netherlands, and Ireland (Mintz 2001).
- Canada's tax system, although improving, relies on relatively high marginal tax rates and narrow bases. High marginal tax rates discourage work effort, investment, and risk taking. Targeted tax measures often support activities that are politically favored, rather than significant contributors to growth and prosperity.
- Canadian tax and expenditure policies have increased the cost of doing business in this country, especially in relation to the United States. Public policies that subsidize education, infrastructure, health care, and social services are swamped by tax disadvantages.
- Tax and expenditure policies have impaired Canada's productivity by favoring some business activities and not others. The targeted policies have eroded the country's comparative advantage by encouraging entrepreneurs to seek less profitable economic opportunities, thereby making poor use of scarce resources.

Technical Appendix to Chapter 4

This appendix briefly explains some of the technical aspects of the University of Toronto International Tax Program model used for estimating effective tax rates on capital. (For detailed discussion, see McKenzie, Mintz, and Scharf 1997.)

Assume that a firm maximizes profits so that price is equal to the marginal costs of production. Marginal costs, MC, depend on input prices, z, and tax rates on input prices equal to t:

$$P = MC[z(1 + t)]. \tag{1}$$

In the absence of taxes, the marginal cost of production equals $MC[z']$, with z' denoting the input prices depending on the shifting of taxes (if all taxes are shifted to the business, then $z = z'$).

The effective tax rate on the incremental cost of production is therefore defined as

$$T = \{MC[z(1 + t)] - MC[z']\}/MC[z']. \tag{2}$$

Mintz, McKenzie, and Scharf (1997) show that the Leontief production function* would result in the effective tax rate on costs, T, being equal to the weighted average of tax rates on inputs, with $v(j)$ denoting the share of value added of the jth input and $t(j)$ being the tax rate on input costs for the jth input:

$$T = \Sigma v[j](1 + t[j]) - 1. \tag{3}$$

Now assume that the two primary inputs to production are labor, l, and capital, k. For each input and industry, use the value-added weights ($v[j]$) based on data developed by the Technical Committee on Business Taxation (Canada 1998). The effective tax rates in this model are derived as follows.

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* Other cases were also derived, but the analysis in this monograph uses the Leontief case as an approximation.

Capital

Firms are assumed to invest in capital until the marginal return on capital equals the gross of the tax cost of capital. Let R be the gross rate of return to capital and r the net-of-tax rate of return to capital (a weighted average of the cost of debt and equity finance). R is the weighted average of the cost of capital, gross of taxes and net of subsidies, for structures, inventory, machinery, land, R&D, exploration and development, and infrastructure. Each capital input is measured by:

$$R = (r' + d)[1 - A + F](1 + s)/(1 - u)$$
$$\text{with } r' = Bi(1 - u) + Be - p, \tag{4}$$

where

A = the present value of tax depreciation, allowances, and subsidies given for capital,
F = the present value of asset-based capital taxes on new purchases,
s = the sales tax rate on capital inputs,
i = the interest rate on debt,
e = the required risk-adjusted rate of return on equity,
p = the rate of inflation, and
u = the corporate income tax rate.

All tax expressions for the cost of capital are estimated similar to McKenzie, Mansour, and Brulé (1997) for both Canada and the United States. Data for R&D grant subsidies are taken from the OECD. Infrastructure subsidies are estimated as proportion of total private expenditures on structures, using input-output data for Canada and United States.

The effective tax rate on capital is estimated as $t(K) = (R - r)/r$.

Labor

Firms use labor until the marginal output from an additional unit equals the cost of labor. Let W be the cost of one more unit of labor,

gross of taxes and net of subsidies, and w be the net-of-tax cost. The gross-of-tax cost of labor is

$$W = w(1 + t_i - s), \tag{5}$$

where

t_i = the combined personal income, payroll, and sales tax on labor, and
s = education and health subsidies as a portion of the net-of-tax wage.

The payroll tax is net of benefits from publicly provided programs, and the estimates used are based on analysis done for the Technical Committee on Business Taxation (McKenzie, Mansour, and Brulé 1997).

The health subsidies are reported as a percentage of net wages received in each industrial sector. The health care benefits of the working population are calculated and then expressed as a share of net-of-tax wages. As a check, the average benefit rate is about $1,700 or 6.5 percent of net salary costs for each Canadian worker, which closely matches other information on the cost of health care insurance premiums. Data were derived from a survey conducted by the Canada Life and Health Insurance Asociation (Statistics Canada 1998).

Education benefits are estimated using an intertemporal human capital acquisition model, as described in the text. The present value of subsidies by industry is annualized to arrive at a value expressed in annual wages. On average, the Canadian education subsidy is about $2,540, or 11.5 percent of net-of-tax salary costs, and the US subsidy is about 7.7 percent of those costs.

The marginal personal income tax rate is the sum of the personal income tax rate, the employee payroll tax rate, net of the credit, and the sales tax rate on current and future consumption (expressed as a percentage of income, gross of taxes). The margin-

al tax rate was reduced to reflect the value of nontaxable health care benefits, and the values converted so that they could be expressed as a percentage of the net wage. Sales tax rates are estimated in each country as sales and excise taxes divided by consumption (OECD 1998).

The wage distribution, gross of personal taxes, is based on the work developed by the Technical Committee on Business Taxation (Canada 1998), Statistics Canada (1997), and the US Department of Commerce (United States 1998).

The effective tax rate on labor is

$$t(L) = (W - w)/w = t_i - s.$$

5 The Canadian Advantage as a Framework for Policy

As Canada faces the twenty-first century, it is being challenged, like other countries, to determine how best to achieve a rising standard of living for its citizens. In a world that is integrating at the global level and that is already tempting some of those citizens to trade, work, and invest abroad to earn higher incomes, Canada must be astute in creating the right economic environment for growth to attract people and capital. This will not be achieved by duplicating what others do. Instead, Canada can best establish itself as the world's most favored nation by being innovative and by offering an environment that provides a basis for sustained economic growth.

All Canadians have a role in creating a distinct Canadian advantage, whether through creative works of science and arts, business acumen, or productive effort. Canadian governments must play a particularly crucial part. Their fiscal and regulatory powers have a significant influence on the performance of the economy.

At present, governments are creating disadvantages through inefficient public expenditures and high taxes that compromise comparative advantage, productivity, and competitiveness. These econom-

ic handicaps are bound to become more costly as countries integrate more at the international level.

This chapter looks at how our public policies can be reformed not only so as to eliminate disadvantages but also to create a better environment for economic growth. In today's world, a country must be distinctive in order to attract the best and brightest — mimicking others is insufficient to achieve higher-than-average levels of incomes (Martin and Porter 2001).[1] The framework for sound public policy is, therefore, creating the Canadian advantage by providing an attractive package of fiscal policies that would allow us to achieve a much higher standard of living and to eliminate the gap between us and other parts of the world, including the United States. Each public policy should be measured in this light.

The chapter first examines the question of how much government Canada needs, which leads to a detailed discussion of the role of government. Several countries with high per capita gross domestic product (GDP) and good social services — Iceland, Switzerland, and Ireland, for example — have government sectors that are only a third of the economy, much smaller than Canada's. In fact, the size of Canada's public sector is close to the average of the countries of the Organisation for Economic Co-operation and Development (OECD) and its per capita GDP is only slightly above the OECD average. Given the size of Canada's government debt, unfunded pension and health care liabilities, and an aging population with a shrinking work force, tax burdens will likely rise, rather than fall, during the next 20 years if we continue as in the past. Is there a better path for Canadian governments to follow? Can governments sustain a high standard of living if they account for more than a third of the economy?

The second part of this chapter proposes a set of strategies for Canadian economic and social policies. Reform of taxation would eliminate disadvantages, sustain high growth, and create the Cana-

1 Recognition of the importance of the effect of international economic integration on public policies is the theme of two other comprehensive discussions. See D'Aquino and Stewart-Patterson (2001); Courchene (2000).

dian advantage. Some of the strategies suggested would be unique in the world.

Government: How Much Does Canada Need?

In Canada, government initially followed the model of the United Kingdom, where it has always had an important role in the economy. Sir John A. Macdonald's National Policy — the building of the Canadian Pacific Railway, the settling of the Prairies, and the introduction of tariffs to protect manufacturing in central Canada — played an important role in the development of the Dominion. After the depression of the 1930s, Canada followed other countries in introducing social programs to protect its most vulnerable citizens. By 1970, we had in place the most important public programs: medicare, the Canada and Quebec Pension Plans (CPP/QPP), old age security, publicly provided education, unemployment insurance, and social welfare.

What Are the Roles of Government?

The historical growth of Canadian governments reflects three important roles they have pursued to improve citizens' standard of living.

The first role is to provide essential public goods and services, including military and police protection from external and internal threats as well as the enforcement of the laws, rules, and regulations that govern the good behavior of citizens. Public goods and services of this form have two identifiable characteristics: (a) their value is the aggregate benefit accruing to the total population from their joint consumption; and (b) individuals, so long as they are residents of the country, cannot be excluded from their consumption. Although individuals could band together to provide public goods through voluntary contributions, the difficulty of excluding anyone who did not contribute requires citizen participation in determining policies and mandatory payments for the costs of operating the public institutions needed for these purposes.

The second role of government is to enhance the functioning of competitive markets when markets fail to achieve an efficient allocation of resources in the economy. Efficiency is achieved when the prices at which goods and services are sold equal the resource costs of producing them. Markets do not achieve an efficient allocation of resources in several circumstances.

- *Spillovers (externalities).* Some decisions by businesses or households create external benefits or harm without compensation. For example, a business's invention may be copied by other businesses without the imitators' paying the originator a royalty. Given the lack of a guaranteed return to innovation, businesses do not invest sufficiently in inventive activities. Environmental degradation presents another example: polluters may not bear responsibility for the costs they impose on others.
- *Economies of scale.* Markets may not be able to support competition in activities that offer economies of such large scale that it is virtually impossible for more than one producer to provide the product. This point is particularly important for infrastructure projects (such as highways, satellite transmission, ports, airports, water treatment, and power) since, even if they are privately provided, governments may need to regulate prices.
- *Information imperfections.* Insurance and risk-bearing markets may not exist because potential providers lack enough information to distinguish good risks from bad. At a given price, bad risks accept the contract, but good risks refuse them since the price charged is too high. Thus, for example, governments in many countries mandate unemployment insurance so that all workers, not just bad risks, contribute to the program.

The third role of government is to redistribute resources in the economy from rich to poor. The activities here include the provision of money and in-kind transfers to the poor through subsidized public programs, as well as the operation of a progressive tax system whereby the rich pay more than the poor relative to their incomes. Such inequality-reducing transfers decrease risks to Cana-

dians who may face periods of low income due to job layoffs or business bankruptcies. In Canada, as in most federations, the federal government also redistributes resources among regions, including transfers to equalize provinces' revenue capacities and their tax progressivity.

What Causes Government Failure?

In principle, few Canadians dispute these important rationales for government intervention in the economy. But these arguments provide little guidance as to when or how much governments should actually intervene.[2] In fact, there are good reasons to expect that government intervention may harm, rather than improve, economic welfare if public programs are poorly designed, costly to administer, or otherwise result in a less productive economy.

One clear reason for the failure of government intervention is that, even though the road may be paved with good intentions, it may also be full of potholes. There are four types of costs associated with public interventions that can more than offset the gains governments hope to achieve.

- *Allocative costs as markets react to incentives.* Public interventions can worsen productivity. For example, governments rarely have better information than private lenders for distinguishing good projects from bad. However, investors with bad projects on hand know where to find governments willing to provide handouts. Evidence suggests that public intervention in financial markets to encourage more risky investments (such as venture capital, savings in stock markets, and investment in exploration and development) simply results in too many new

2 Theoretically, the approach should be to undertake a study that compares the economic benefits and the costs of program delivery. However, the measurement of those benefits and costs is not an exact science, and significant uncertainties are associated with determining whether a public program will actually succeed.

projects with poor returns that would not be able to obtain finance in private markets.[3] Also, studies on job creation programs generally show that they have failed to achieve their objectives of creating new jobs since targeted subsidies may simply lead to the substitution of subsidized for non-subsidized workers (Cherniavsky 2000).

- *Price effects that reduce the effectiveness of government programs.* When governments intervene in markets, prices adjust to offset the value of the public program. Thus, analysts criticize regional development programs and regional investment tax credits as tending to lead simply to higher prices for fishing boats and other subsidized assets, rather than creating new jobs in the economy (see McMahon 2000). Incentives to encourage the location of high-technology businesses in a particular site can result in the payment of higher rents to landlords, thereby offsetting, at least in part, incentives to encourage particular activities.
- *Political costs that erode the value of the program.* Public policy decisions, even those that are intended to improve economic and social structures, can quickly become embroiled in the politics of the day. Politicians interested in maximizing their power base often "pork barrel" to gain sufficient support for a particular policy. Canadian politicians keep their eyes on rural and regional support in their search for sufficiently broad support for their policies. One result is often acceptance of some bad policies in order to accomplish the good ones — a combination that has economic costs.
- *The deadweight costs of taxation.* Finally, even though a particular public program may be shown to achieve good results, there is no free lunch. Financing it requires taxes. The economic costs of

3 The average pre-tax returns on many tax-subsidized investments in Canada have been low or negative even though after-tax returns have been sufficiently good to attract investors. See, for example, Suret and Cormier (1997) on Quebec stock savings plans; Jog, Lenjosek, and McKenzie (1995) on flow-through shares for junior mining and oil and gas exploration; and Osborne and Sandler (1998) on labor-sponsored venture capital funds.

raising them are related to discouraging work, savings, risk taking, and investment. As the Canadian economy becomes more integrated with that of the rest of the world, the cost of raising taxes, particularly on mobile capital and workers, is much higher than it was in earlier decades when factors of production were less mobile. With greater mobility of capital and people, the economic distortions related to taxation increase substantially.[4]

An Optimal Size for Government?

The idea that government intervention in the economy has social value that can be offset by economic costs suggests to some people the possible existence of an optimal size for governments, one that would maximize either the level or the growth rate of the economy. Too much government can reduce economic output. Too little government can also reduce economic performance. To determine the optimal size, one must include other factors that influence growth rates, such as human capital, physical infrastructure, population growth, reliance on natural resources, and the country's stage of development. Incorporating these factors, some studies suggest that the optimal size of government is 22.5 to 30.0 percent of GDP (see Branson and Lovell 2001; Tanzi and Schuknecht 2000).

These studies tend to concentrate on broad aggregates and few try to separate the impacts of specific government expenditures and taxes on growth rates. A recent one (Kneller, Bleaney, and Gemmel 1999) that tries to do so shows that a percentage point increase in public "productive expenditures" (education, health care, infrastructure, and defense) as a proportion of GDP can increase a country's growth rate by 0.26 of a percentage point. Further, the

4 Studies of the marginal cost of public funds have suggested that the economic cost is $2 or more for corporate income tax (Ballard, Shoven, and Whalley 1985) and $13 for personal income surtaxes (Dahlby 1994). Recent studies incorporating the impact of capital flows in open economies and the implications for tax policy include Thalmann, Goulder, and Delorme (1996) and Fehr (2000).

authors find that a percentage point increase in "distortionary" taxes (payroll, income, and business taxes) a proportion of GDP decreases the growth rate by 0.4 of a percentage point. Unproductive government expenditures and nondistortionary taxes do not affect growth rates. Thus, smart expenditure policies financed by nondistortionary taxes can increase growth. However, smart expenditures financed by poor taxes can lower growth. The authors do not suggest whether there is an optimal size to government.

An Additional Consideration

In thinking about these concepts, Canadians cannot afford to ignore the coming shift in the *age-dependency ratio* (the relationship between the economy's number of members of working age and the number who are too old or too young to work).

A recent OECD report (2001) estimates the impact of aging on the expenditure and tax policies of all the organization's countries, taking into account changes in fertility, life expectancy, labor force participation, and immigration flows. The estimates for Canada suggest that by 2050 expenditures on elderly benefits and health care, net of savings from spending less on education and child benefits, could cause our program expenditures to rise 8.2 percentage points of GDP.[5] And since the elderly (even after cashing in their retirement assets) tend to pay less tax than workers, aging would reduce the tax-to-GDP ratio by 1.2 percentage points. Thus, Canadian governments would need to raise enough taxes to cover a primary deficit of 9.4 percent of GDP. The implication could be a rise in the tax-to-GDP ratio to more than 50 percent in the coming half century if budgets are to be balanced and all other factors stay the same.

The outlook for the United States is not as extreme. Aging is predicted to cause spending to rise 4.9 percentage points of GDP and taxes to decline by 0.3 of a percentage point. With no other changes, therefore, the US tax-to-GDP ratio would need to rise by

5 Publicly funded health care costs would rise more than 4 percentage points of GDP, an amount similar to that estimated by Robson (2001).

about 5.2 percentage points, to approximately 37 percent if budgets are to be balanced.

None of the above calculations should be treated with certainty. Private and public sectors may respond in ways that help to ameliorate some of the demographic impacts on government balance. However, given that Canada already has greater debt and tax levels than the United States, we face an immense demographic challenge in terms of competitiveness.

What Is the Answer?

As already noted, Canadian governments have grown from 30 percent to about 43 percent of GDP in recent decades while US governments increased only somewhat. The fastest Canadian growth was in three areas: interest on public debt, social services, and community and environmental programs. Interest on public debt is simply governments' payment to domestic and foreign bondholders to compensate them for lending money to the treasury. Such debt subtracts from the economy's capacity. Social services, particularly labor market programs such as employment insurance and social welfare, have a limited, sometimes negative, impact on productivity in the economy. Community and environmental programs that include regional and industrial assistance have questionable impacts on productivity. On the other hand, rising taxes, particularly in the form of income and business taxes, have a negative impact on growth.

Our knowledge of the future does not suggest that Canadian governments will get any smaller if we continue to follow the policies of the past three decades. In the past, the costs of many Canadian public services — those that educate our children, pay doctors and hospitals to cure the ills of our families, and provide for our retirement incomes — were pushed off to the future by means of public debt, unfunded health care schemes, and unfunded pension liabilities. With the coming demographic changes — an aging population and a relatively smaller working population — the debt burden of these past decisions means that, within two decades,

workers will need to pay taxes to cover the unfunded liabilities. Higher tax burdens in the future will add to the pressures on Canada as it faces a more competitive world for people and jobs. Thus, if the country continues its pursuit of current public policies, governments will grow even more in relation to the economy. These policies will not be sustainable since people and jobs will move to those jurisdictions that offer a better package of goods and services and smaller debt burdens.

Should new resources be poured into spending programs or into cutting taxes? If Canadian governments are too small, then funds should be devoted to new expenditure programs. If, however, they are now too big, if they have gone beyond the size needed to improve citizens' standard of living, then taxes should be reduced.

In other words, the question has no clear economic answer. One must, however, note two points.

- The increase in the size of Canadian governments has been accompanied by a decline in the country's growth rate.
- With greater mobility of people and jobs, the economic cost of taxation is increasing.

Therefore, Canadian governments must seriously question whether or not the expenditure programs they undertake play a useful role in the economy. Do we really need public expenditures that are more than a third of the economy?

Clearly, Canadian governments could reach a more manageable size if they took actions to reduce public debt, interest charges, and taxes. Recall from Chapter 3 that public debt charges are now less than 9 percent of GDP. Reductions in that number would go a long way toward making governments smaller, affording significant cuts to taxes in the future. But consider that subtracting interest expense from total expenditure (43 percent – 9 percent) leaves program expenditures about 34 percent of GDP. Spending at that level still means governments that are larger and taxes that are higher than in the late 1960s when program expenditure was about 27 percent of GDP.

A Strategy for a Higher Standard of Living

Would simply reducing debt be a sufficient strategy for the future? Or do we need to undertake other policies to make governments so efficient that they can create a significant Canadian advantage? These questions are not rhetorical. Rather, they lead directly to consideration of what must be done to raise Canadians' standard of living within the new global economy.

Certainly, we are making strides, and one hopes the next decade will be better than the 1990s. Until recently, economic growth rates have been rising and the lives of many Canadians, even the poorer ones, are improving as unemployment rates plummet.

The temptation now is to become complacent, thinking that the economy will significantly improve over the coming decade and need little action on our part. Yet growth in the future will face major challenges.

- Technological innovations will require Canadians to adopt new methods of production, distribution, and communication. Canadians will have not only to learn new skills but to adapt to the quickening pace at which technologies are adopted. Individuals' knowledge will become outdated ever more quickly, requiring greater investments in education and training to make up for faster rates of depreciation of human capital.
- Economic integration at the international level will increase the mobility of businesses and individuals seeking their best opportunities. To attract and keep the best workers and managers, Canada will need to offer a "winning" environment. A major part of this environment will depend on the policies Canadian governments offer.
- The aging of the population and low fertility rates will create labor shortages in many sectors of the economy. Canada will need more capital, more immigrants, and more labor market policies that encourage work (such as extending the age requirements for retirement and reforming social policies so

they do not create a barrier for individuals who seek to improve their standard of living).

None of these challenges is specific to Canada. They apply to virtually all industrialized countries. What is specific to Canada is our trading relationship with other countries, especially the United States. With recent technological developments, businesses are able to separate production into components, break off core from non-core activities, specialize in producing some products in one place rather than another, and place high-value-added production in low-tax jurisdictions. A key strategy for Canada, as part of the North American Free Trade Agreement (NAFTA), would be to establish itself as the primary location for businesses to serve the North American and other export markets, capturing the high-value-added production. Otherwise, the country could become a hinterland with a local market serviced by businesses located elsewhere, including in the much larger US market. The former outcome would mean high productivity and growth for the Canadian economy. The latter would imply little innovation and increased reliance on other countries for trade and ideas.

Taxation Policies

Some readers may think Canadian governments have no need to change their policy course drastically. In the past year, some have recognized the need to make their policies more attractive than those of the United States for job creation. They have put greater priority on education, research, and training at postsecondary institutions. And they are cutting personal and corporate income taxes by 2005.

Figures 27 and 28 show the effects of federal and provincial cuts in effective net-of-subsidies tax rates on the cost of production compared with that in the United States. The calculations include reductions in corporate income tax rates by 7 percentage points and various personal income tax cuts at the federal and provincial levels. They also include planned US cuts to personal income taxes

(about 3 percentage points in marginal tax rates). On average, the effective tax rate on costs in Canada, calculated without labor taxes and subsidies, would be 4.6 percent by 2005, down from 5.5 percent in 2000. With labor taxes and subsidies included in the calculation, that rate would average 39.4 percent, down from 47.9 percent.

The figures reflect the problem. The existing tax plans are insufficient to make Canada a haven for investment and jobs. Even after their full implementation, these policies would create a significant disadvantage relative to the United States for most industries. On average, the US effective tax rate on costs would be 14.2 percentage points below the Canadian effective tax rate (including all taxes and subsidies for labor and capital). In other words, with all else equal, Canadian businesses would face an excise tax on costs 14.2 percentage points higher than that in the United States in 2005. There would be no advantage to investing in Canada. Instead, there would be a significant disadvantage.

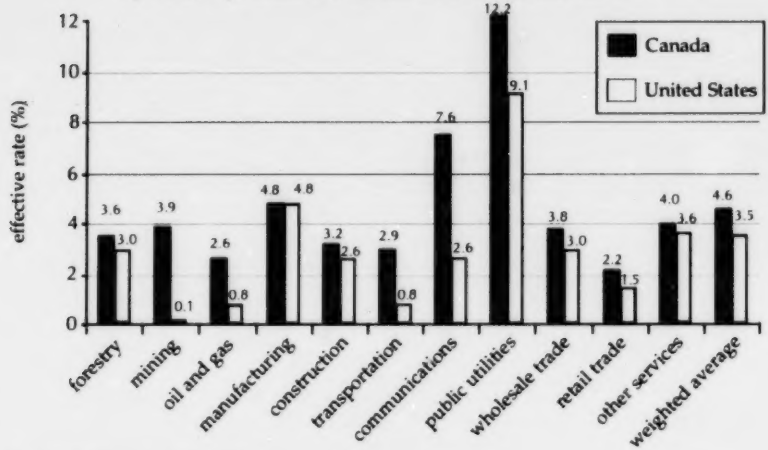
Distinctive Policies

Clearly, the strategic choice for Canada is to make itself a center for enterprise, maximizing opportunities to improve the incomes of Canadians. With higher incomes, Canadians could well afford efficient social policies that would ensure all parts of the population gain from growth.

Following this strategy would not be easy. Given the size of the United States, it would be natural for businesses to locate there, where the largest market demand, workforce, and pools of capital currently reside. Canada would then be serviced by businesses from US locations. Thus, if Canada simply offered an environment similar to that of the United States, it would not provide any winning conditions to attract businesses here.

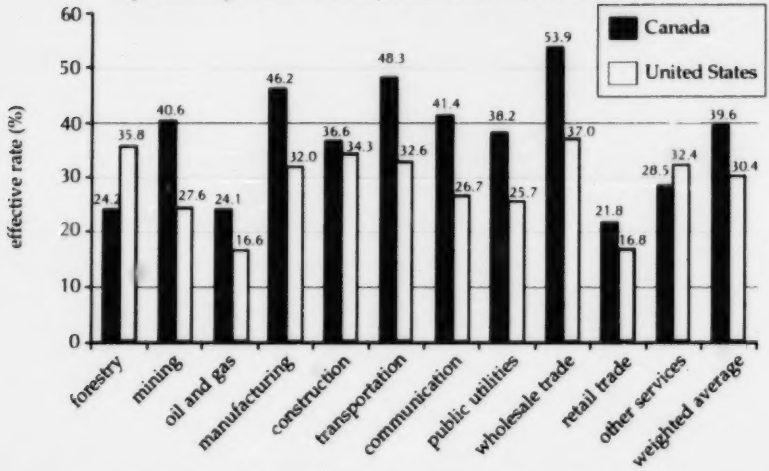
To create a unique environment, Canadian governments must offer a whole set of policies that are distinctive, not ones that simply imitate or are harmonized with those of other countries. Distinctiveness would allow Canada to separate itself from what other countries, especially the United States, do in the world.

Figure 27: ***The Cost of Doing Business: The Effective Tax Rate Net of Subsidies, Excluding Taxes and Subsidies on Labor, by Industry, Canada and the United States, 2005***



Source: University of Toronto, International Tax Program.

Figure 28: ***The Cost of Doing Business: The Effective Tax Rate Net of Subsidies, Including Taxes and Subsidies on Labor, by Industry, Canada and the United States, 2005***



Source: University of Toronto, International Tax Program.

In some ways, Canada is already distinctive. It is an inclusive country with a high rate of immigration. Historically, it has welcomed people from all parts of the world and integrated them in society. It also has one of the highest education levels among industrialized countries. The skills attained by its workers are highly attractive to businesses inside and outside the country. Moreover, Canada is rich with natural resources, including oil, gas, minerals, forests, and water. The availability of these resources gives it a distinct comparative advantage.

Thus, an overall public policy framework for creating the Canadian advantage should recognize and build on four imperatives:

- *Encourage labor supply and skills.* Growth depends on not just the number of people working but also their supply of skills and their productivity. To attract businesses offering jobs with high incomes, Canada needs to ensure that its population is well trained and people are encouraged to work. This goal requires paying significant attention to its education, training, and social policies. It also means adopting efficient programs that encourage workers with skills in many trades to move to or stay in Canada.
- *Create more jobs and improve productivity in Canada.* Growth depends not just on the supply of labor but also on the creation of jobs within the country. Canadian workers would have rising income levels if businesses invest in capital and raise productivity levels. Therefore, policies should be geared to creating demand for well-trained workers in Canada. And to attract businesses to the country, governments must offer public services at reasonable tax levels.
- *Be innovative.* To remain competitive, Canadians need to "stay ahead of the game," adopting the latest technologies, including those developed in other countries. Efficient public policies should support technology and research; policies that inhibit technological development and adoption should be removed.
- *Invest more in capital.* As the population ages, Canada needs to encourage much more investment and savings. Otherwise, the

burden of pension liabilities, growing health care costs, infrastructure for the elderly, and the public debt would have to be borne by a potentially smaller working population paying increased taxes to cover support for the elderly. This burden would compromise our standard of living within two decades.

A Package of Reforms

Given these strategic objectives, Canadians should be contemplating reforms well beyond cuts to tax-rates. They need policies aimed at spurring growth and enabling a higher standard of living. A three-point plan for prosperity created by smart public policy would include the following.[6]

- *Smart spending.* Tax dollars can drag down the economy. To make better use of them, our expenditure policies should be made the most efficient and effective in the world. Governments should embark on reforms to target programs at the critical needs of the economy, rather than the support of ailing businesses or outcomes of little benefit to Canadians. Programs should be designed efficiently so that objectives are achieved without creating the high economic costs that come from encouraging Canadians to pursue nonproductive activities. Reforms should include operating social insurance programs, such as employment insurance (EI) and health insurance, more on insurance principles; improving education and infrastructure programs; targeting social benefits better; and removing the obstacles that public programs create by inhibiting work, savings, and investments in technology.
- *Smart debt finance.* With a major reduction in public debt over the coming years, governments can accommodate reductions

6 The discussion here differs somewhat from my April 12 address to the Canadian Club (Mintz 2001). In it, I include the notion that governments should reward success, not failure.

in taxes over time, putting Canada on a more competitive basis. A substantial reduction in government debt would also permit financing of benefits for the elderly, reducing the future tax burden on our shrinking working population. Government debt should be brought down from over 80 percent to 25 percent of GDP in the next decade and a half so that our tax dollars can be used for program expenditures.

- *Smart taxation*. Canada should embark on reform to create the most efficient and fairest tax system in the world. A tax system should neither interfere with the creative pursuits of Canadians nor reward the failures of those who cannot operate successfully. A smart tax system would be one that levies taxes on the principle of what people consume, rather than on what they produce. Governments should resort to taxes according to the user-pay principle, rely more on expenditure taxation, and levy progressive taxes that provide greater incentives for work and creativity. Improving productivity and job creation should be a major focus of business tax reform that would make Canada the world's most attractive location for business investment.

Even this far-ranging three-point plan ignores some public policy elements that could help to create the Canadian advantage. Regulations should be smart in application, maximizing benefits net of economic costs. All systems of intergovernmental grants, including equalization, the transfer of tax points, and conditional grant programs, should be smart by creating the greatest political incentives to contain costs even when one government spends without paying the political price of taxing the population. However, space precludes including regulations or intergovernmental grants in my discussion below.

Smart Public Expenditures

Canadian governments should seek to create the best public services in the world, with program delivery so effective and efficient

that it is an example for other countries. To accomplish this objective, governments should have frequent expenditure reviews of programs and eliminate the ineffective ones to accommodate better ones. Civil servants should be rewarded for achieving stated objectives with efficiently run programs. The key questions for expenditure reviews should be related to the objectives, effectiveness, and financing of public sector services. Overall, evaluations should use the following criteria.[7]

- Is there a need for the public program to provide a public good, correct for market failures, or improve the distribution of income in society?
- Is the program effective in accomplishing its objectives?
- Could the program be operated better in the private sector — with public monitoring or regulation if necessary — rather than publicly provided? If the program is publicly provided, what role, if any, would the private sector have in the delivery of services?
- To what degree should the program be funded by fees or taxes paid by users?

Federal, provincial, and local governments should not be afraid to embrace reforms that have been well tested, through either experiments or experiences throughout the world. The key is to look for effectiveness and efficiency to encourage better use of resources by both the public and the private sector. Ultimately, the productivity of the economy would be enhanced and Canadians would enjoy a better standard of living.

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7 The House of Commons Finance Committee (Canada 1999b) proposed a set of criteria for review of federal expenditure and regulatory programs. Some provinces, such as Alberta, regularly conduct expenditure reviews by departments. Federal and provincial auditors-general have been reviewing programs using "value for money" audit criteria. Expenditure review should be a continuous approach used in government and made transparent with regular reports that can be reviewed by the public.

The focus below is on education, health care, physical infrastructure, and social services, which together take up almost 75 percent of Canada's program expenditures, or 24 percent of GDP. All the areas offer the possibility of significant reforms that would, in general, increase the efficiency of the public sector and improve fairness through better targeting and elimination of implicit subsidies for users who would be able to pay. Some reforms would result in expenditure savings or user-pay revenues that could be used for reinvestment in other programs or for cutting taxes.

Education and Training

The role of government in education is critical for three reasons. The first is that the education of the overall population contributes to greater productivity of not just individual workers but also coworkers, who learn from each other. The second is that publicly financed education allows members of society to improve themselves according to their ability, rather than according to the resources they have available to pay. Thus, education helps to equalize opportunities among Canadians. The third is that education helps to build good citizenship, including a better understanding of Canada and its provinces.

Among major industrialized countries, Canada is one of the largest spenders on education as a proportion of GDP (see Table 5).[8] About 85 percent of that expenditure is public. The amount spent on education is not, however, an indicator of what outcomes are achieved. Investigations use a variety of performance measures, including the level of education, salaries and employment rates for graduates, and scores on international tests. A measure of particular interest is the comparison of Canadian students' performance on international tests with that of students from other countries. Recent studies show quite significant interprovincial variance; Manitoba and Saskatchewan, for example, score highly on literacy

8 Nevertheless, Canada's public and private expenditures per student on post-secondary education lag those of Sweden, Switzerland, and the United States.

Table 5: ***Education Statistics, Selected OECD Countries, 1996***

	Public Expenditures	Total Expenditures	Expenditure Per University Student[a]	Current Upper Secondary Graduation Rate	Index of Earnings, University to Upper Learning[b] (25–64-year-olds)
	(as % of GDP)		*(US$ thousands)*	*(%)*	*(index[c])*
Canada	5.8	7.0	11.5	73.1	161.8
Denmark	6.5	7.1	8.2	81.3	134.9
France	5.8	6.3	6.6	85.4	176.0
Germany	4.5	5.8	8.9	86.0	151.4
Ireland	4.7	5.3	7.2	79.0	179.2
Italy	4.5	4.7	5.0	78.8	151.1
Japan	3.6	4.7	8.8	98.8	—
Netherlands	4.6	4.9	9.0	81.2	139.0
New Zealand	5.3	—	8.7	92.6	159.5
Norway	6.8	—	9.6	117.5	144.6
Sweden	6.6	6.7	13.1	81.3	151.1
Switzerland	5.5	—	15.7	80.9	153.7
United Kingdom	4.6	—	7.2	—	176.0
United States	4.9	5.6	16.3	72.5	179.0

[a] Using purchasing power parity.

[b] Arithmetic average of male and female rates.

[c] Ratio of university graduates' earnings to secondary school graduates' earning, set at 100 for equal earnings.

Source: OECD 1999.

while Ontario has been below average (Willms 1997). Another measure of success for an education system is the value of the production its graduates generate, which is indicated by the salaries that firms are willing to pay them over nongraduates. Salaries depend on the productivity of the business sector, not just the skills of workers. Recompense will, therefore, depend on both the supply of skills and the firm's demand for those skills. Thus, while Canada has the third-highest graduation rate for university education,[9] the earnings ratio between university and upper-secondary-level educated workers is less than the similar ratio in Finland, Ireland, Portugal, the United Kingdom, and the United States, indicating a lack of demand for the supply of educated students.[10] Further, unemployment rates have been higher for university students in Canada than in many other industrialized countries.

Over the next decade, the education system will face many challenges, particularly with respect to postsecondary education. Faculties will see significant turnover as professors and teachers retire. Innovations in communications will provide opportunities for new methods of teaching and of preparing materials. Student populations may decline in the next three decades, given the fall in fertility rates experienced in the recent two. Many of these changes could result in significant savings in teaching costs.

Thus, a key issue facing Canadian governments is not just spending more money on education but making sure that it is spent effectively in providing high-quality programs that are accessible to the broad population. Adult learning is becoming more

9 Canada's university-trained workers are 17.3 percent of the 18–64 year age group, a proportion lower than that found in the United States (25.8 percent), the Netherlands (22.5 percent), and South Korea (19.0 percent). See OECD (1999).

10 The lower return to education partly reflects the fact that Canada educates more students at the postsecondary level than most countries, as discussed in Chapter 3. However, it also indicates insufficient demand by business and a mismatching of supply with demand by the market. In other words, Canada may be graduating more students than most other countries but in fields that offer lower salaries.

important since workers need to adapt to changes in the working environment and technology. With oncoming labor shortages, a critical concern is ensuring a sufficient supply of motivated teachers for primary and secondary schools. The postsecondary education system may be particularly strained since salaries are likely to sharply increase in fields such as business education, medicine, biotechnology, computing, and engineering; if Canadian universities are to compete in a world market for talent, they must match foreign salaries. In many provinces, student enrollment at universities and colleges is expected to increase significantly over the next few years. Governments have constrained per student funding, but this decline has been offset, to a certain degree, by private sector support and by tuition fee increases (although the latter are held down by provincial regulation).

At the same time, the rapid changes that are occurring in education practices and the demand by businesses for students requires educational institutions to be flexible in their planning. Flexibility is best achieved by letting autonomous institutions develop creative programs in competition with each other, rather trying to centrally plan the education system.

The overall challenge to Canada is to create a significant advantage by having an accessible education system with high standards. In this regard, Canadian governments should review three issues. The first is the funding formula for institutions, which is now generally based on student enrollment. Instead, as in the case of some provinces, funding could be more related to outcomes, such as achievements on scholastic tests, improvements in salaries or the employment rates of graduates, and, in the case of universities, research success.

The second is to consider removing regulations that inhibit competition for students among educational institutions and programs. Institutions would then be free to allocate resources to meet demands, specializing in providing education programs that operate more effectively and efficiently. Various arrangements are possible. For example, state-funded vouchers for students would encourage greater competition and experimentation among pri-

mary and secondary schools in that the funding would depend on their ability to attract students. Parents could be allowed to create publicly funded schools so long as certain conditions are satisfied. Quebec, Alberta, and British Columbia already use this system, which caters to the needs of parents who are looking for alternative forms of education. Postsecondary institutions could compete among each other by independently charging differential tuition fees for student programs.

A third reform to consider is more funding of primary and secondary education through user fees, rather than general public funding financed by property tax revenues. Property taxes bear little relation to the cost of operating schools; moreover, such taxes are onerous for low-income homeowners and for tenants of residential property,[11] many of whom are low-income families needing education. Tuition fees would provide a source of revenue in which the user pays for some of the costs the program incurs. Further, once parents contributed more directly and transparently to the system, they would likely feel that they have a stake in the education process and place demands on both their children and teachers for better quality learning. Schools would become more accountable to parents, rather than to governments.

Some caveats are necessary here, given the importance of free education to ensure that students, regardless of income, are given similar quality education. To minimize any burden for low-income families, it would be critical to use bursaries, tuition fee reductions, and personal income tax credits, administered fairly. Further, public standards for the curriculum would require government to continue funding a significant share of the costs. Already, schools in some provinces charge parents for supplies, but without much attempt to assess fees according to use and affordability. Nonetheless, by replacing even some property tax revenues with tuition

11 In 1992, property taxes as a share of income ranged from 8.66 percent for low-income Canadians to 1.92 percent for high-income Canadians (Boadway and Kitchen 1999, 362). The Fair Tax Commission (Ontario 1993) recommends that education be financed with income taxes rather than property taxes.

fees, taking into account affordability, Canadian governments could improve not only the efficiency of the tax system but also its fairness (since this approach would relieve low-income property taxpayers from a regressive tax).

Creating the best and most efficient education system in the world would create a significant advantage for Canada, putting us well ahead of many other countries, including the United States.

Health Care

The argument for public intervention in the supply of health care services is more complicated than in the case of education. Better health improves the overall productivity of the workforce. Consider vaccination programs that reduce the spread of communicable disease; individuals' investments in health can have important spillover effects on others. However, health care is also a consumption decision by people who seek to deal with pain and suffering. The role of government in subsidizing the consumption of health care is largely related to equity and distribution objectives. If a family faces substantial costs relative to its resources, health care may bankrupt it. Government support of health care is a form of insurance against large unaffordable expenditures that many families might have to incur.

Given that health is critical to a person's well-being, citizens care much about patient choice. In the absence of government intervention, families must cover the cost of health care by reducing expenditures on other goods they desire, purchase insurance to cover illness, or accumulate savings for contingencies. Consumer choice is best achieved when providers compete among themselves in the provision of services.

Although this market model has many desirable features for efficiency, it presents two significant problems. The first is that insurance may not be available to those who are ill since its costs may become too high even for its providers. Even if such insurance is available, low-income households may not be able to afford the expense. The second problem is that the information needed to

determine the quality of health care services is hard for consumers to obtain since they must rely on professional opinions that can be difficult to monitor.

Governments in all countries respond to these issues by imposing regulations or subsidizing the cost of health care. Regulations, including minimum standards of education and performance, can address some of the quality and informational problems. Because such regulations ensure that only high-quality providers can obtain licenses, consumers have more confidence in the administration of the system. Mandatory employer-paid health care insurance, public subsidies for health care costs, and the public provision of medical services are used to ensure that the population has coverage for health care expenses.

The Current System in Canada

Canada's health care system is both public and private. Government generally funds primary care services, including hospital and physician care. Prescription drugs and community care are partially funded by government, usually for the poor and elderly. Dental and certain other medical services are fully privately funded. At present, Canada is one of the largest spenders on health care among major OECD countries (see Table 6). Canadian governments fund about 70 percent of health care expenditures, although that public share has been declining in recent years.

The achievements of Canada's health care system are many. Our infant mortality rate is one of the lowest in the world and our longevity rates are among the highest — the typical Canadian lives on average two years more than an American (see Table 6). For appraising the system in terms of how it helps Canadians cope with pain and illness, better measures of success would be the length of waiting lists for medical procedures and the overcoming of diseases. But there are few reliable estimates for comparing achievements.

Canada's health care system has been strained in recent years by a combination of fewer public resources and greater demand for

Table 6: ***Health Statistics, Selected OECD Countries, 1997***

	Public Expenditure	Public and Private Expenditure	Total Expenditure per Capita[a]	Doctors per 1,000 Population	Infant Mortality	Life Expectancy	
						Women	Men
	(% of GDP)		*(US $000)*		*(per 1,000 live births)*	*(years)*	
Canada	6.4	9.2	2.1	2.1	6.0[b]	81.5	75.4
Denmark	6.5	7.6	1.8	2.9	5.6[b]	78.0	72.8
France	7.3	9.8	2.0	2.9	4.8	82.0	74.1
Germany	8.2	10.5	2.3	3.4	4.8	79.9	73.6
Ireland	7.0	5.2	1.3	2.1	6.2	78.5	73.2
Italy	5.5	7.8	1.6	5.5	6.2	81.3	74.9
Japan	5.7	7.2	1.7	1.8	3.7	83.6	77.0
Netherlands	6.2	8.6	1.8	2.6	5.7	80.4	74.7
New Zealand	5.7	7.4	1.3	2.1	6.9	79.8	74.3
Norway	6.5	7.9	1.9	0.8	4.0	81.1	75.4
Sweden	7.2	8.6	1.7	3.1	4.0	81.5	76.5
Switzerland	7.1	10.2	2.5	3.2	4.7	81.9	75.7
United Kingdom	5.8	6.9	1.3	1.6	5.9	79.3	74.4
United States	6.3	13.6	3.9	2.6	7.8	79.4	72.7

[a] Using purchasing power parity.

[b] 1996.

Source: OECD 1996.

services. Health care is the largest component of provincial budgets, at least a third of total expenditures. What lies in the future is even greater demand for health care services as the population ages, new technologies are introduced, and the incomes of professionals increase. Robson (2001) shows that public health care expenditures could well approach 60 percent of provincial revenues by 2040. Provincial governments would then have fewer resources available for other priorities, such as education and infrastructure.

Canadian governments are currently engaged in reforming the health care system. In the forefront seem to be two goals: to improve accountability in the system, so as to increase its efficiency, by improving information flows and establishing measures of success; and to ensure sufficient human and financial resources for the system. Although these objectives are laudable, they do not necessarily address the primary issue of what mechanisms best ensure the delivery of high-quality, efficient health care services.

Like other countries, Canada tries to achieve the important social objectives of ensuring access to quality health care services. Governments regulate that quality by controlling standards and funding positions available for training doctors and nurses. Governments also subsidize health care costs by providing full or partial public funding for primary care, drug, and long-term care, and tax benefits for the cost of supplementary care.

However, does the operation of the Canadian system lead to an efficient provision of health services? The current system lacks accountability. Consider a few examples. Consumers and providers are not aware of the benefits and costs of what the public sector provides, so there is little appreciation of the costs society incurs. Political accountability is also lacking as the federal government is pressured to raise taxes to provide transfers to the provinces, which administer health care programs. Hospitals, given fixed budgets, do not necessarily allocate resources so as to maximize the greatest net benefits of various procedures (some are too expensive financially even though they yield the greatest benefits). Doctors, paid according to their services, allocate time according to the value of the service provided, but they are constrained from billing more

than regulated fees up to annual limits. Finally, publicly and privately funded services are not integrated. Thus, for example, patients in long-term or home care must cover a significant portion of costs privately, a situation that increases the demand for hospital services, while hospital administrators, faced with fixed budgets, seek to shift patients to private services.

The absence of market prices for consumers and suppliers of health care services imposes a heavy burden on public planners to allocate resources to meet the needs of Canadians looking for care. With growing demand and limited resources, the rationing of services becomes necessary in order to deal with demand in excess of the system's capacity. The consequences of such rationing are an increase in the use of private services (including those of other countries, such as the United States) and the *de facto* privatization of parts of the medical system by de-listing services that were once covered by government.[12] To keep costs from rising, governments also impose constraints on the incomes of medical service providers, an approach that tempts many to choose other professions or migrate. The latest idea for keeping costs down is capitation, whereby doctors are compensated according to the number of patients, rather than the level of services provided to them. In a system that has little competition among suppliers, compensation by capitation seems an attractive way of reducing the costs health authorities face. However, practitioners would have less incentive to spend time with a single patient since their incomes would increase with having as many patients as possible on the roster.

Possible Reforms

Because the health care demands of an aging population will surely increase over time, health care expenditures will undoubtedly

12 One method of privatization, already happening by stealth, is simply to de-list the number of services covered by the public health care system, as has been done recently in Oregon and several provinces. In its 2001 election campaign, the Labour Party in Britain also proposed to de-list several common services from the National Health Service.

increase as a percentage of GDP. If the system remains largely public and funded by general tax revenues, then the levels of income and consumption taxes on the working population must increase or other expenditures on important public programs such as education and social services must be curtailed. Any growth in public funding for health care will, therefore, result in smaller productivity-enhancing expenditures on education or infrastructure or in higher taxes on the working population. Thus, any reforms to be considered for health care must address efficiency, fairness, and the availability of resources.

Canadians have long taken pride in their health care system as a way of creating a distinct advantage in supporting a better standard of living. Coverage is universal. Efforts have been made to contain costs. Yet suppressing the availability of services and technology means rationing. With the aging population's becoming an increasingly important factor in political support, governments will face substantial political demand to devote even more resources to health care. Thus, it is more important now than ever for Canada to reform its health care system so as to maintain a distinct advantage in the provision of effective and efficient services. Canadian governments should consider three types of possible reforms to improve efficiency in the health care system and thus increase financial resources.

The first reform is to better integrate the services provided by different health providers. Governments in several provinces have instituted regional health authorities that allocate resources across a number of competing services, such as hospital and home care. They could go a step further by creating a one-stop contact point where citizens could be guided to a health clinic, hospital emergency room, or wherever they can obtain the most effective form of the health care they need at the time. New technology could play an important role in giving Canadians more information about different forms of services.

The second possible reform would be to increase private participation in the health care system, increasing its efficiency and responsiveness to changes in demand and technologies. Private

participation should also inject more competition among suppliers, providing pressure to improve both the public and the private supply of services. However, the de-listing approach could simply reduce opportunities for integrating primary services with other medical services, such as prescription drugs and non-hospital care. An alternative to de-listing of services is to undertake an integrated approach, using both public and private modes of health services for all forms of health delivery. As a result, some services that are now largely private could receive more public support while others, now wholly public, would be partly privatized. In other words, one way to meet greater demands for health care without rationing Canadians is to relax regulations that inhibit participation by the private sector. European countries, including Sweden, Germany, and the United Kingdom, permit greater involvement of the private sector while still maintaining a system that covers the whole population. To protect the quality of the public system, they invoke regulations to ensure that good-quality doctors continue to work with it.

A third possible reform is to develop new funding schemes for health care services that would result in greater accountability and increased financial resources. Two such schemes are:

- Establishing medical service accounts (see Gratzer 1999; Donaldson, Currie, and Mitton 2001), which could, in principle, operate similarly to registered education savings plans (RESPs) as a way of pre-funding private health expenditures, including those incurred by our aging population. Individuals and families could put funds in the plan; contributions would not be tax-deductible, but withdrawals would be tax free if spent on health care. Governments could provide matching grants directly to these accounts.[13] Such registered accounts would enable

13 Alternatively, the features of the system could instead mimic more closely registered retirement savings plans, for which contributions are deductible, income built up in the plan is not subject to tax, and withdrawals are fully subject to tax.

governments and consumers to save for future expenditures as the population ages, thereby relieving the future workforce from paying more taxes. Furthermore, the scheme would enhance accountability since consumers of health care services would be able to choose how to spend their money among competitive suppliers. If medical savings accounts are contemplated, governments could consider integrating them with retirement savings and education amounts.

- Introducing a variable premium to be paid by taxpayers, via their personal income tax forms, to cover eligible costs funded by the public health care system (see Gordon, Mintz, and Chen 1998). The premium would be based on public health care benefits received and would vary according to the taxpayer's income, family size, and private health care expenditures; it could be eligible for the medical expense credit. This system would require new forms of accountability in that provincial health authorities would need to report to taxpayers the benefits received from the public funded system. The receipts would provide additional resources to fund the health care system, thereby reducing reliance on income and consumption taxes.

These reforms are among several possibilities that would improve the efficiency and funding of the health care system. A critical objective for Canada is to ensure that its health care system enhances the Canadian advantage. Health care expenditures should not squeeze out other important public priorities or lead to taxation levels that would create significant disadvantages for Canada in the future.

Physical Infrastructure

Another important aspect of creating the Canadian advantage is the public provision of physical infrastructure: roads, highways, port facilities, power, waterworks, and communication networks. Physical infrastructure is significant for encouraging investment by

the private sector and for improving Canada's ability to compete in world markets.

Government's role in the provision of infrastructure is related to the degree to which competition can operate there. If a substantial number of producers can supply the service, government has little need to intervene. But many infrastructure projects have large fixed costs, and only one or a limited number of suppliers can provide them economically. In the absence of competition, government should provide the service directly through public works or, alternatively, regulate terms and conditions, including prices, for private delivery. The prices should be sufficient to cover the unit costs of production, including a normal return to capital; in some cases, government could cover the fixed costs of production, with revenues to the private supplier covering the variable costs.

Providing infrastructure is wasteful, however, if the benefits are less than the economic costs (Vining and Richards 2001). Too often, governments resort to public infrastructure spending to shore up political support, rather than to enhance the economy's productivity and competitiveness. The provision of highways in isolated rural areas has been a political issue for many provincial governments, since the per capita cost of constructing and maintaining highways in these areas is quite high. Consider, as another instance, the federal government's recent announcement that it intends to invest in bandwidth so that all Canadians, no matter where they live, can be connected to the Internet. This decision may be uneconomic in some cases. Expenditures on bandwidth, particularly in isolated areas with few residents, impose a substantial economic cost per capita that may be far less than the benefits received. Moreover, although interconnectedness is important in principle, it is not clear that all Canadians need the same access, especially since alternative methods are available.

When governments provide public infrastructure, one of the issues is whether the service should be free of charge to users (as in the case of highways and roads) or funded by a user fee (as in the case of public transport). Most countries increasingly are relying on user fees, rather than general income and consumption tax rev-

enues, to fund transportation projects in order to encourage more efficient use of services and to reduce congestion. User fees are fair in the sense that the individuals benefiting from the public service pays for the cost of operating it. If, however, the intent is to provide citizens, especially those with lower incomes, with access to the service, fees may be subsidized or not charged at all. Another reason for avoiding fees is that they may be administratively difficult to collect — imagine trying to collect fees for the use of residential streets. Instead, services are usually funded by property taxes paid to municipal authorities.

Government intervention in the supply of infrastructure may be necessary at times, but significant participation by the private sector is still possible. In many countries, private producers are involved with the design, construction, and operation of projects, bidding competitively for government contracts. They are remunerated by fees, paid by public authorities, that cover the costs of providing contracted services, such as private laboratory testing for medical services. Alternatively, governments may allow private producers to charge regulated fees for services, as in the case of provincial power authorities in Alberta.

A significant issue in public intervention is the allocation of risk between public authorities and private contractors. When governments guarantee private suppliers minimum profits, cost overruns become common, and the prices charged are inefficient. Alberta saw an example of this type of problem with the Swan Hills treatment center for hazardous waste (see Mintz 1995b). The provincial government had guaranteed the private producer, Bovar Ltd., a minimum profit rate on its investment. Bovar therefore faced no risk from any actions that resulted in losses. It experienced large overruns, and the Alberta government had to cover a significant loss of over $300 million (in 1995 dollars). Eventually, the private producer was paid to take over the project but the Alberta taxpayers' cost for the affair totaled $700 million. This example demonstrates that poorly structured contracts for public-private partnerships can result in substantial waste. The private sector should bear risk in proportion to its role in the operation of projects.

If government operates the infrastructure itself, as in the case of roads, highways, and some airports, project financing is critical, either from general tax revenues or from user fees. In the case of highways and some bridges, tolls have not been a significant source of revenue in Canada, unlike in many other countries, including the United States. However, the federal government, on the recommendation of the Royal Commission on National Passenger Transportation (Canada 1992), has transferred certain transportation services to municipalities, nonprofit bodies, and the private sector. For example, airport facilities were passed on to municipal nonprofit corporations that charge user fees to cover operating costs.

As reported in Chapter 3, infrastructure expenditures by Canadian governments were about 1.5 percent of GDP in 1996, having declined from 2.0 percent in 1970. The falloff resulted in part from greater private provision of infrastructure. It also reflected, to some extent, lower capital spending by governments in general.

Demands for more public expenditure on infrastructure should be carefully assessed since it is not obvious that governments need to supply funds for infrastructure. To the extent that competition through private supply is possible, public investment is not needed. Instead, the primary role of government should be to regulate prices if necessary. And when public investment is necessary, the efficient use and supply of the service is encouraged by private participation in the return (and risk) derived from the construction and operation of the facility, with reliance on user fees as a significant source of revenue.

Thus, greater infrastructure spending in Canada should not be viewed as simply increased expenditure by governments. Instead, governments should ensure that infrastructure is provided efficiently so that it contributes to Canada's advantage.

Social Services

Government-provided social services are primarily related to three objectives:

- To provide a social safety net for individuals and families who fall on hard times through bad luck, loss of employment, disability, or poor health. They need temporary monetary and nonmonetary support until they (or family members) can reestablish themselves by entering labor force.
- To relieve individuals from poverty and reduce inequality in society. Longer-term support goes to those who can no longer work due to age, illness, or similar circumstances.
- Through unemployment insurance, to improve job matching by providing support for individuals when they need time to find new employment.

Social services support involves cash and often in-kind transfers, such as free health care. Governments may also create special programs to help individuals acquire the skills the labor market demands. While such policies have important effects in increasing the stock of workers and improving productivity, governments throughout the world face the difficulty that some policies may discourage people from participating in the workforce. Programs to help to lift the poor from poverty may tempt some individuals who are able to work to choose not to do so since they can live on tax-free supplementary income. Moreover, as Finnie (2000) shows, many households are in poverty only for temporary periods. Thus, a significant objective for social services is to provide support for employable individuals without creating incentives for recipients to refuse opportunities for work. The design of these programs is critical in determining both their effectiveness and their cost, including the amount of taxes needed to fund them (Atkinson 1999).

Social services — EI, social assistance, and support for the elderly — are the largest expenditures Canadian governments make. Like those in other industrialized countries, governments in Canada undertook significant reforms of these programs throughout the 1990s to increase recipients' incentives to become self-sufficient. Benefit payments have declined dramatically in the past several years, reflecting not only those reforms but also better prospects for

employment. However, social services still remain a significant expenditure for Canadian governments.

As governments' fiscal positions are improving, commentators are paying increased attention to social service programs, and some reforms — especially to EI — have been rolled back. For these programs to be successful in improving productivity in the economy, however, we need to contemplate further reforms to make them more efficient, increasingly supportive of those who need it the most, and less reliant on general tax revenues for funding.

Employment Insurance

The EI reforms of the mid-1990s tightened claimants' eligibility for benefits by instituting an intensity rule and stiffening clawbacks.[14] Both changes aimed primarily to discourage repeat use, and one way of doing so was the introduction of partial employee *experience rating*, an insurance term that refers to tying the payouts or the premiums to the insureds' histories and thus their risk.[15]

Since then, the reduction in the repeat use of the system and the fall in unemployment rates have combined to cut expenditures dramatically. The result is that the program is operating at a significant surplus. Recently, however, the federal government dropped the intensity rule and lessened the impact of the clawback rule for those who make repeat use of the EI system. These changes backtracked on partial experience rating, thereby moving the system to one less based on insurance principles.

The recent reversal of EI reforms will certainly not create the Canadian advantage. Without some partial experience rating, which provides an incentive for people to re-enter the workforce,

14 Specifically, the reforms clawed back up to 5 percentage points of benefits on the basis of the number of weeks of regular benefits a claimant had received in the previous five years. And a higher-income claimant was required to make higher contributions, with the calculation on the level based on past claims experience.

15 Partial experience rating had originally been proposed in the reforms of 1971, but it was not put into place then.

unemployment rates are bound to be higher than they would be otherwise (see Canada 1998, chap. 8).[16] Such changes to EI undercut the productivity and competitiveness of the Canadian economy. We need to consider a new agenda of reform.

The most substantial objective should be to put insurance into the EI program, creating a closer relationship between the benefits received and the contributions paid by employees and employers. Insurance programs generally operate to cover the risks the insured faces but charge fees that differ according to the risk classification of the insured. The program (unlike provincial workers' compensation programs) provides little experience rating (employer or employee) for assessed contributions in relation to their layoff experience. Thus, the very existence of employment insurance may encourage workers to accept riskier jobs and firms to resort to more frequent layoffs — additional costs to both employers and employees.

Given that the federal government has rejected the use of experience rating for benefits received by employees, perhaps a more politically acceptable form of experience rating is to change the rules for determining employers' contributions. The Technical Committee on Business Taxation (Canada 1998, 8.12) argues that those contributions should be about one-quarter experience related, so that the charge would be more in line with the experience that a business has had with layoffs. The committee says this mild form of experience rating would reduce unemployment rates by half a percentage point. Robson and Poschmann (2001) suggest using only experience-rated employer contributions to match the costs of the EI program, with a better payroll tax to offset any losses to general federal revenue.

Such a move to insurance principles would clarify the role of what is, after all, the employment *insurance* program. Premiums would fall and the fund would be balanced, instead of operating at

16 See Nakamura (2000) for a critique of the 2001 federal legislative changes to the program.

a substantial surplus as it does now. Also, any special benefits provided through the EI program, including sickness leave, should be experience-related. These changes would make Canada's EI system much more efficient, contribute to growth in the economy, and add to Canada's advantage.

Social Assistance

The federal government provides direct monetary social assistance only to aboriginals on reserves, but it offers an income-tested child benefit and a GST tax benefit that provide significant support for low-income families. The provinces provide nontaxable monetary assistance to recipients, on the basis of certain eligibility restrictions, with payments varying according to whether the person is employable, disabled, married, or has children.[17] Provinces also provide various kinds of non-cash support, including social housing, homes for special care, free medical and dental services, and work activity projects. If the recipient earns income, the cash assistance is reduced more or less dollar for dollar, and the non-cash benefits disappear at various thresholds.

An important problem associated with social assistance is the "welfare wall." Because social assistance benefits are nontaxable and payments are reduced to the degree that recipients earn taxable income, the effective tax rates on incremental income earned by the working poor can be punitive. To lower the welfare wall, provinces increasingly are integrating their social assistance programs with other parts of the transfer system, particularly the child tax benefit. Recently, Ottawa and the provinces agreed to reforms that would reduce nontaxable social assistance at the provincial level when Ottawa provides larger child tax benefits. The child tax benefit is a refundable tax credit paid to all families. Once a family earns more than a certain threshold of income, the amount of the

17 Ontario and British Columbia require welfare recipients to perform community service if they are able bodied.

benefit starts to be clawed back.[18] Given additional incentives provided for work through reformed provincial assistance programs, the federal government canceled its working income supplement program, which had provided a subsidy to those who worked.

These reforms are important, but they raise several issues for further consideration. The first is the size and inconsistency of the welfare wall, which reduces incentives for work and savings. In the past several years, governments have tended to replace grants by refundable tax credits, which make it easy for them to claw back benefits, at rates integrated with personal income tax schedules. In theory, this approach should ease the social assistance system for both recipients and governments. By filling out an income tax form, an individual can receive the benefit, paid monthly, with simplified administration through the income tax system. As Poschmann and Richards (2000) and Shillington (1999) point out, however, combined personal income marginal tax and clawback rates can reach levels about 100 percent for some lower- and middle-income earners. This can deter people from working and saving income for their future. Greater effort is needed to integrate federal and provincial personal income and clawback rates for different social assistance programs to keep marginal tax rates from becoming too high.

Another issue is the degree to which assistance should be in cash rather than in specific goods subsidized or provided by governments. Recent economic studies[19] suggest a strong case for greater

18 The current threshold is about $21,000. Benefits are reduced at a 10 percent rate for one child, 19.7 percent for two children, and 27.6 percent for three or more.

19 See, for example Blomquist and Christiansen (1998), who provide an intuitive discussion of economic theory related to these issues. The theory is based on the observation that some recipients who could earn sufficient income without assistance may "mimic" recipients who do need the income. By reducing work effort, more able individuals mimic less able ones. Government assistance, however, cannot be based on ability. Instead, it is based on the individual's income, which can reflect either ability or hours of work. If, however, other conditions are attached to benefits, such as free training, housing, and child assistance, as a substitute for cash, then it may be easier to create incentives for mimickers to work rather than claim social assistance.

use of in-kind social assistance, such as subsidized education, health care, housing, child development programs, and school food programs. The argument in favor of cash assistance is that governments should not distort recipients' priorities for expenditures. Moreover, some cash is necessary for food and other necessities that public services cannot provide. On the other hand, governments may wish to support certain expenditures that are key for individuals seeking to enter or re-enter the labor force. Thus, in-kind subsidies combined with some basic cash support would both improve the efficiency of social assistance and be more effective in ensuring that the basic needs of families are met.

Benefits for the Elderly

Current benefits for the elderly include old age security (OAS), the guaranteed income supplement, the spousal allowance, and the CPP/QPP.[20] All but the last are income tested. The income tax also has special provisions to reduce taxes for the elderly, including an aged credit (also income tested) and the pension income credit.

Canadian governments have gone a long way to protect the elderly from extreme poverty, providing a minimum annual income of close to $10,000 for a single person and $18,000 for a married couple who receive only OAS and the guaranteed income supplement. Other special tax and nontax benefits, as well as free health care, give significant support.

Elements of that support are, however, questionable in design. One problem is that some benefits are paid to seniors who have significant incomes. The full OAS payment for individuals with less than about $54,000 income (the program's clawback threshold) provides taxable benefits for many recipients of above-average

20 Recently, the federal and provincial governments agreed to a set of reforms to improve the funding of the CPP/QPP. The jury is still out on whether further reforms will be needed to avoid increases in payroll taxes beyond the current plan, and it will take some time to see if the actuarial predictions will come true. In this section, I do not discuss any further reforms of the CPP/QPP.

income. The pension income tax credit, which is available to all seniors regardless of income, and the aged credit, which is available for individuals with income of up to $49,000, seem to have little role other than to relieve the elderly from payment of tax.[21] Considerable savings could be achieved by cutting back benefits for elderly people who have significant incomes when they retire, although this approach would mean an increase in clawback rates for the middle-income groups. Such a change would, of course, have to be announced to current workers well before they retire, giving them sufficient opportunity to accumulate wealth to replace the lost benefits. Thus, any savings would take many years to realize.

A second set of issues is related to public policies that may discourage individuals from saving for retirement, thereby increasing their dependency on public support. The availability of public benefits, such as OAS, after retirement creates an incentive for workers to spend on current consumption goods, rather than save for their later years. Further, high taxes on the working population erode their capacity to accumulate wealth for retirement. Finally, limits on tax-deductible contributions to private pension plans and RRSPs[22] as well as the high marginal tax rates taxpayers face as a result of clawback rates for social benefits (Shillington 1999), reduce households' incentives to accumulate wealth for retirement and other contingencies. Ill-designed policies that are aimed to provide support to the elderly can be costly to governments, thereby requiring more tax dollars to fund the system.

Measures to ensure that elderly benefits are funded will be critical to Canada's future as the population ages. Otherwise, the working population will face high tax rates to support their elders.

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21 Arguably, the role of the aged credit is to recognize the higher costs the elderly face relative to other taxpayers. However, given the various public services provided the elderly and the lower cost of living they face when no longer raising a family, it is difficult to see why special credits exist for seniors. One could argue instead for a credit for young working families that incur significant child-rearing costs.

22 Individuals can make tax-deductible contributions of only the lesser of $13,500, or 18 percent of earned income.

Governments should ensure that Canadians have incentives to accumulate savings to cover the cost of social assistance and health care for the elderly. Such actions could put Canada at a distinct advantage relative to many other industrialized countries, which will all be facing similar pressures.

An Additional Comment

Although the discussion above concentrates on education, health care, infrastructure, and social service expenditures, I am not suggesting that no other reforms are possible and desirable. Business subsidies, including regional development programs, industrial assistance, and job creation programs have been especially wasteful since they are often directed at enterprises that would otherwise go out of business. As a result, Canada does not maximize its economic advantages since distortionary taxes, often on productive parts of the economy, must be raised to finance subsidies for nonproductive enterprises. This is not to say that governments cannot sometimes pick a winning business. But the political choice to subsidize certain businesses usually springs from a desire to improve political fortunes rather than Canadians' standard of living.

Smart Debt Policy

Although public debt has been reduced by the federal and provincial governments, it still totals over 80 percent of GDP (of which over 25 points represent provincial and local government debt) and remains a significant burden for the future. Further, with unfunded OAS and health care liabilities, the total amount of unfunded debt left to the next working generation will require substantial tax revenues. Robson (2001) calculates, for example, that the unfunded liabilities of health care are as much as $800 billion — an amount equal to government debt — and these liabilities, like other debt, will need to be funded by Canadians.

One way of reducing the impact of future demographic pressures is to substantially reduce current government debt. The interest cost of public debt now absorbs over 8 percent of the economy's output. If public debt were reduced to about a quarter of GDP, public debt charges would fall to about 2 percent of GDP, allowing Canadian governments to reduce revenues from 43 percent to about 37 percent of GDP, reversing the run-up of taxes in the recent past.

To accomplish this objective by 2015, all governments would need to operate at an average annual surplus of $20 billion each year (assuming an average nominal growth rate of 5 percent in GDP). Total government debt would fall to about $500 billion by 2015, making room for a planned reduction of taxes.

Although some people may think that running large government surpluses is not politically viable, federal and provincial governments have been retiring public debt in the past two years at amounts close to $20 billion per year. Indeed, perhaps we should consider even larger surpluses during these good economic times. After all, governments were not shy about operating at deficits of $40 billion per year during the 1980s and early 1990s. Large surpluses that result in a substantial decline in government debt would make it possible to cut taxes significantly over the next 15 years or so. Canada would be able to turn a major disadvantage — the size of its public debt — into a significant fiscal advantage by 2015.

Smart Tax Policy

The burden of taxation in the coming decades will depend largely on how public expenditures grow or decline, a subject already much discussed in this chapter. What has not yet been considered is how taxes should be levied.

Once revenue requirements are fixed, two critical issues involved with tax policy arise: the first, is the choice of tax bases (consumption, income, property, payroll, or users) and the second, the design of each tax.

Principles for Taxation

The choice and design of taxes depend in large part on the principles used for determining tax policies. Since the days of the Carter Report (Canada 1966), Canadian tax policy has been primarily based on three principles.[23]

- The tax system should be efficient by not distorting unduly the work effort, savings, investment, and risk-taking decisions of taxpayers.
- The tax system should not impose substantial compliance costs on taxpayers or administrative costs on governments.
- The tax system should be fair.

Also generally accepted is the notion that the tax system should be used only to raise funds for governments and perhaps to redistribute income or wealth (a subject discussed later in this section). It should not be used to carry out economic or social policies, which are best left to the expenditure decisions of governments, where there is better parliamentary scrutiny and accountability. By keeping non-revenue-raising objectives out of the tax system, experts argue, tax rates can be kept low and bases defined broadly with few exemptions and deductions. Broad bases and low tax rates improve efficiency and fairness in the tax system, as well as making it relatively easy for taxpayers to comply with it and for governments to administer it.

There are alternative views. Bird and Mintz (1992), for example, argue that the tax system may be used as a method of delivering certain public programs that is cheaper than expenditure programs and regulations. Thus, taxes may be used for both economic and social policy purposes, as in the case of the research and develop-

23 See Boadway and Kitchen (1999) for a comprehensive review of tax policy issues. For a comprehensive review of the history of tax policy, see Hale (forthcoming).

ment (R&D) tax credit and the child tax benefit programs. Many experts believe, however, that the use of taxes for objectives other than revenue raising is better related to special cases, rather than accepted as among the primary goals of the system.

Thus, for example, the Carter Report says that personal taxes should be levied at rates no higher than 50 percent and use *comprehensive income* (all sources of annual income) as a measure of the taxpayer's ability to pay. The report argues that, with annual income defined to include wages and salaries, capital income (dividends, capital gains, interest, and rents), and inheritances, with the costs incurred to earn income (covered by deductions such as personal exemptions, allowances to recognize special costs, such as for disability, and the subtraction of interest expenses for earning income), and with a tax credit given to owners of firms to recognize the payment of corporate taxes paid prior to the distribution of income and earning of capital gains, this approach reflects a taxpayer's capacity to consume and to increase net worth.

The Carter Report also lays out principles for a fair tax system. One is equal treatment of equals, which implies that taxpayers with similar resources should bear the same tax burden (*horizontal equity*), a goal consistent with the efficiency objective to minimize distortions. A second principle is that the tax burden should vary according to ability to pay. In other words, marginal tax rates should rise progressively with income because the rich are more able to pay than the poor (*vertical equity*). This argument in favor of progressive taxation is based on the notion that taxes should be used to redistribute income or wealth in society and on a utilitarian principle for justice: that taking a dollar from a rich person is less painful than taking a dollar from a poor one.

In summary, the Carter Report was explicit in proposing that taxes should apply to all sources of annual income and that the system should recognize horizontal and vertical equity. These principles of taxation have long been an accepted philosophy of Canadian tax policy (although the final result has never been a pure application of them).

Should Annual Income Be Taxed?

Do the principles of the Carter Report actually enhance fiscal competitiveness and create the Canadian advantage?

In recent years, many experts have challenged the notion that annual income is the appropriate measure of ability to pay.[24] Instead, say these scholars, consumption is a better measure of a taxpayer's ability to pay taxes. Their argument rests on the notion that, by not recognizing a taxpayer's lifetime resources, an income tax imposes higher taxes on savings than on consumption. Under the income tax, a person who saves must pay tax not only on her earnings but also on the income that saving earns her in future years. If she saves no income for future consumption, then she pays less tax over time. Thus, two people with equivalent earnings can pay different amounts of tax over their lifetimes, depending on their savings patterns.[25]

The argument for consumption taxes is that, because they recognize the taxpayer's lifetime resources, they are more efficient and fair than income taxes. Further, consumption taxation can be viewed as more appropriate and viable, given the reality governments face in today's world. The arguments here are several.

- It is increasingly difficult to levy taxes on capital income, which is much more mobile than earned income. Several countries, including Denmark, Finland, Norway, Sweden, and the Netherlands, have adopted "dual income taxes," whereby taxes are levied at lower rates on savings and investment than on employment income (Sorensen 1994).

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24 Arguments against the annual income approach can be found in the Meade Report from the United Kingdom (Institute of Fiscal Studies 1978) and the United States Treasury's *Blueprint for Basic Tax Reform* (1977). Also challenging the notion are several Canadian reports, including the Macdonald Commission (Canada 1985) and the Economic Council of Canada (1987).

25 The Meade report (Institute of Fiscal Studies 1978) says that bequests from one generation to another can be viewed as a form of consumption. Others argue that bequests need not be taxed if they are included in the heirs' tax base.

- No country imposes an ideal annual tax on capital income. It is always imprecisely measured. In principle, this income should be indexed for inflation and appropriate deductions be given for the cost of asset depreciation.
- Further, capital gains are imperfectly taxed (see Mintz and Wilson 2000). Some capital gains are implicitly taxed by income taxes that apply to future returns earned by assets; therefore, taxation of capital gains is adjusted to recognize other taxes imposed implicitly on the gains. Further, taxpayers can defer taxes on capital gains until assets are sold, but this possibility encourages investors to lock in their gains. Capital losses are deductible against capital gains only in order to minimize opportunities for taxpayers to play games with the system. But limitations on deductions for losses may subject risky assets to high effective tax rates.
- Financial innovations in markets are making the taxation of capital income increasingly difficult. So long as capital gains and losses are treated differently from other financial income, taxpayers can pay different amounts of taxes on capital income according to the type of financial derivative they hold. For example, a stock return can be mimicked by a combination of bonds and stock options; the tax treatment depends on whether the income is income or capital gains.
- Given increasing labor shortages, capital is needed to ensure that productivity gains in the economy are sufficient to cover firms' wage costs for skilled labor. Further, with greater need for flexibility in labor markets as people easily go from one job to another, change occupations, or move to new locations, taxpayers need to save for retirement and other contingencies. Thus, high taxes on savings impose substantially larger economic costs on the economy than previous studies suggest.[26]

26 For a review of the impact of taxes on savings, see Boadway and Wildasin (1996). McKenzie (2000) and Dahlby (2000) find that there would be significant economic gains from moving toward more consumption taxes.

- To the extent that taxes based on the user-pay principle are a payment for the consumption of public services, they are an appropriate element of a consumption tax regime.

These arguments provide compelling reasons to shift Canada toward consumption taxation. Some commentators argue, however, that people who accumulate wealth have greater economic power than others and should therefore be subject to higher taxes. This argument is a basis for a wealth tax, not an annual income tax that would apply an equal burden on earnings and capital income. (For a discussion of wealth taxation in Canada, see Mintz and Pesando 1991.)

Moving toward consumption taxation in Canada would not be difficult. We already have several taxes on consumption that businesses collect (the GST, provincial sales taxes, and excise taxes, including those on fuel, tobacco, and alcohol). These could be maintained as important sources of revenue for governments. The personal "income" tax is already based on a hybrid of consumption and annual income tax principles. Because *consumption* is defined as the difference between income and savings, increased deductions for savings in RRSPs and the introduction of new forms of tax-assisted savings would shift the personal tax toward consumption. So would the introduction of new kinds of plans under which dividends, interest, and capital gains could be earned on a tax-free basis (see Kesselman and Poschmann 2000). If such plans had no limits on contributions, Canada would move to a largely consumption tax system and would thus encourage the ownership of capital in Canada and greater savings for the future.

An important related issue is the role of business taxation. Canada has already begun lowering corporate income tax rates to levels consistent with those of other industrialized economies and well below those of the United States. So long as Canada continues its hybrid of annual income and consumption taxation for the personal tax, governments should continue with reforms to the corporate tax to make it more neutral and internationally competitive. As discussed by the Technical Committee on Business Taxation (Cana-

da 1998, chap. 3), an improved business tax would have significant impacts on economic growth and productivity.

However, if the personal income tax were converted into a pure consumption tax, the current corporate income tax would not be consistent with it. For example, if the personal tax exempted dividends and capital gains, individuals could avoid taxes on earnings by converting salary compensation into these tax-free forms. Thus, to ensure that all taxpayer earnings would be subject to personal tax, the business tax would be need to be converted to a new base. For example, a consistent business tax could apply to the profits of a company in excess of the return that investors require in order to invest in it. "Profits" here would equal the increase in accounting equity plus dividends net of an interest allowance for cost of the increase in equity financing.[27]

The effect of the reforms described above for current personal and corporate income taxes would be to reduce the levy imposed on investments and savings, two critical factors for increasing Canada's capacity for growth.

Progressive Taxes

Progressive taxes can be defined in two ways. Either the average tax rate (taxes divided by income) or the marginal tax rate (taxes paid on last dollars earned) rises with income. (With rising marginal tax rates, average tax rates rise faster than they would otherwise.) With a progressive tax system, economic growth in the economy raises the tax-to-GDP ratio, since the average tax rate rises with income. Progressivity is illustrated by Canada's personal tax system, since it features both average and marginal tax rates

27 Italy has a corporate income tax, introduced in 1998, that allows companies to deduct a cost of equity financing. Croatia has successfully instituted a personal tax and a corporate tax that do not affect savings or investment. Capital income is exempt at the personal level, and corporate taxes apply to a base defined similar to that described in the text. The Croatian corporate tax is applied to both nonfinancial and financial activities. Bird and Mintz (2000) make a similar proposal for a business tax on value added.

that rise with income. For example, the federal personal tax applies at a rate of 17 percent on the first $30,000 of income, 22 percent on the next $30,000, 26 percent on the next $40,000, and 29 percent on income above $100,000 in income.

Some analysts argue that a consumption base is regressive in that consumption declines with annual income. As already noted, however, annual income is an inappropriate measure of a person's lifetime income, since savings can be consumed in the future. Consumption taxes can be made progressive by taxing income, net of savings, at progressive rates.[28]

Fairness as an objective for the tax system is particularly contentious because notions of equity vary across taxpayers. Disputes arise about even horizontal equity, which most experts largely accept. For example, some argue that children are a consumption good, so there should be no deduction for the cost of raising them, but others think that taxes should vary according to the size of the family, as the Carter Report suggested. (See Boessenkool and Davies 1998 for a discussion of the issues.)

Vertical equity objectives are even more contentious. Some commentators argue that the tax system should not be progressive but instead be based on a single (proportional) tax rate applied to income. This view may simply reflect the argument that governments should have little role in redistributing income in society. Alternatively, these analysts may view progressive taxes as an option for redistribution that could instead be done through expenditure. According to this argument, the use of progressive taxes is equivalent to taxing all income at single rate and then giving below-threshold individuals subsidies to reduce their tax payments.[29] Having a single-rate personal tax is consistent with the

28 The discussion below focuses on progressive income taxation, but it could equally apply to a consumption-based personal tax.

29 Proponents argue that a single-rate system is progressive because a personal exemption given for first amounts of income can shelter a significant portion of low-income earners from tax. The tax is progressive, they say, since the average tax rate rises with income. However, if the purpose of the personal ...

principle that taxes should be used only for revenue-raising purposes, not for the conduct of economic or social policy. If redistribution is not part of the tax system, it can be accomplished only through the expenditure side of government.

This last observation raises an interesting issue. Should redistribution be achieved through progressive taxes or through the expenditure system? The arguments for choosing the expenditure approach are threefold.

First, a progressive rate structure reduces the tax paid on income below thresholds for all taxpayers, rich and poor. Although reducing taxes paid by the poor is desirable, the low tax the rich pay on the below-threshold portions of their income forces governments to raise rates on above-threshold income to obtain the same revenue. Thus, the rich pay tax at high rates on *marginal* income to compensate for the loss of revenue resulting from lowering taxes on their own *infra-marginal* income earned below the threshold. High marginal tax rates discourage work effort and savings, thereby impairing both productivity and the competitiveness of the economy as a whole. Further, the reduction of tax on below-threshold income increases the incentive for the rich to enjoy more leisure and work less.

Second, some redistribution policies are best achieved through in-kind, rather than cash, transfers, as already discussed. However, progressive tax policies, the purview of finance departments, are too far distant to be viewed as using the overall system to provide income support for the poor. Integrating cash and in-kind transfers through expenditure policies could result in better co-ordination of redistribution.

Third, taxes are a difficult instrument to use to redistribute income in today's world. Because skilled workers and capital are increasingly mobile, income and activities are being shifted to low-

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Note 29 - cont'd.

...exemption is to recognize a minimum amount of income needed to cover nondiscretionary costs of living, then single-rate taxes are simply proportional to income net of costs and, therefore, are not progressive.

tax jurisdictions and high taxes on the rich may not yield much extra revenue. Thus, a tax system may try to be progressive but, ultimately, governments end up flattening the tax schedule.

Although these arguments in favor of redistribution through the expenditure system alone seem persuasive, opponents offer two important counterarguments. First, it may be administratively simpler to operate cash transfers through the tax system. As discussed above, Canadian governments have been particularly astute in turning universal payments into refundable income-tested tax credits that require no separate administrative structure to handle applications. The introduction of refundable tax credits has made the tax system progressive,[30] in the sense that average tax rates rise with income. It is not, however, progressive in that marginal tax rates do not rise with income. Instead, because of taxbacks, marginal tax rates decline once a taxpayer has so much income he no longer qualifies for the benefits.

Second, marginal tax rates at high levels of income for the rich could be reduced if governments taxed back the relief given when income was below thresholds. For example, when the United States undertook tax reform in 1986, it established two federal tax rates: 15 percent and 28 percent (the 15 percent rate applied to first bracket of income, the amount of low tax income depending on the filer's status). When earned income rose above the initial bracket, the taxpayer would pay a 5 percent tax on the additional income (the taxback) until the 15 percent rate was raised to 28 percent on the first bracket of income. Thus, in effect, Washington introduced three rates, with the middle-income rate of 33 percent being higher than the upper-income rate of 28 percent.

These two points suggest that personal taxes can be an appropriate supplement to the expenditure system in redistributing income. However, marginal tax rates should not necessarily rise with earnings. It may be desirable to keep these rates relatively low

30 One should, however, view the refundable credits as an expenditure program, rather than a reduction of taxes. Statistics Canada uses this approach in its National Accounts system. These analytical studies do not, however, try to model economies based on data consistent with empirical facts.

for high-income ranges to encourage the most able taxpayers to work more (and declare more income). Even though quite high marginal tax rates may be found at fairly low levels of earnings, average tax rates still rise so long as marginal tax rates are lowest at the lowest levels of earnings or taxpayers are given income-tested supplements.

The choice of the marginal tax rate schedule also depends on government's attitude toward increasing the size of the economy (by making the tax system more efficient) and toward redistributing income in society (making the tax system more progressive through rising average tax rates).[31] Recent work[32] that examines tax rates based on efficiency and vertical equity principles finds that marginal tax rates rise, decline, and rise again to a flat rate defined over income while average tax rates rise over all income ranges. An example of an income tax system that would closely exemplify this schedule would be one with a dual rate of tax applying to income in excess of a personal exemption and refundable tax credits that are income tested. The exemption level should match the earnings needed to ensure a minimum level of consumption, (the current exemption for $10,000, below the poverty line, should be raised much higher). The low marginal tax rates at the high end of income would encourage greater work effort, while receiving refunds or paying little tax at low-income levels would provide relief for the poor.

Given these observations, the dual-rate tax, combined with refundable tax credits and other effective social service programs, could accomplish both efficiency and distribution objectives. However, any reforms of the income tax require a careful assessment in terms of their impact on taxpayers and public revenues, which is beyond the scope of this monograph.

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31 Previous theoretical work suggests that marginal tax rate schedules defined over income could look like a hill, with first rising and then declining marginal tax rates, or be U-shaped, with rates declining and then rising. See Mirrlees (1971); Diamond (1999).

32 See Saez (2000), who uses data on the sensitivity of labor effort to tax rates and the distribution of income typical of many industrialized economies.

Other Taxes

The above discussion on consumption and income taxes suggests the existence of considerable room to make the tax system more efficient, simpler, and fairer. Canadian governments collect other taxes, particularly payroll, property, and excise taxes. Should these taxes be part of the tax structure? A few brief comments are in order.

Payroll taxes (see Kesselman 1997 for a recent review), which apply to wages, salaries, and, in some cases, self-employment earnings, are primarily used in Canada to fund social benefits: EI, pension benefits, and workers' compensation. Given the perspective provided here, it is appropriate to levy payroll taxes to fund the costs of public services that operate on the user-pay principle. However, to the extent that payroll taxes are not linked to public benefits, they impose their own distortions on labor markets. Compared to consumption taxes that are paid on goods and services purchased from all sources of earnings, payroll taxes have a different incidence since they tend to fall more heavily on the working population, but, like consumption taxes, they treat taxpayers equally no matter what their savings behavior. Thus, payroll taxes can be a good complement to other taxes.

Property taxes are levied by provincial and local governments and are the primary source of revenue for municipal services and education (for reviews, see Kitchen 2000; Boadway and Kitchen 1999). The rates vary by province and according to use (residential and nonresidential, industrial and commercial). Further, as already discussed in relation to the financing of education, the incidence of property taxes tends to fall more heavily on lower-income individuals. Property taxes also apply at high rates on businesses, for which they are a fixed cost of operation. They thus distort the use of real estate to the extent that they apply at different rates on different types of property (such as residential properties in single-family and multiple-resident use) and on nonresidential property across municipal locations.

As part of a tax structure, property taxes provide a relatively stable source of revenue. To the extent that they are absorbed in the

value of land, they are also relatively efficient taxes. In recent years, however, increased downloading of expenditure responsibilities to municipalities has put significant pressure on property tax systems. The revenues usually do not grow as quickly as the economy. Thus, municipalities are finding that their growing expenditure responsibilities (social services, housing, and infrastructure) are insufficiently funded by this relatively static source of revenues. Further, some municipalities with substantial fiscal needs are facing tax competition from other municipalities willing to reduce property taxes to encourage businesses to locate in their jurisdiction. Therefore, municipalities are looking for new sources of revenue, including user fees for municipal services (for example, libraries and garbage collection) and levies on fuel. In terms of competitiveness, user fees are a more efficient source of revenue for municipalities, although other potential taxes, such as municipal sales and excise taxes, could play some role in financing.

Excise taxes are used to discourage consumption of "sin" commodities (tobacco and alcohol), luxury goods (jewelry), and other products deemed to be harmful (fuel). Gambling revenues received by governments are also an implicit tax on "sinful" activities. Although strong arguments exist for the continued use of excise taxes as part of the overall tax structure, it is important that they be applied with efficiency and fairness objectives in mind.

One example is the fuel excise tax, a major source of revenue for federal and provincial governments. Although some proponents argue that they are surrogate user charges for the use of roads and highways, their levels are well above the costs of providing that infrastructure. Indeed, the federal fuel excise tax serves little role (outside of being an easy revenue grab for Ottawa) since its original purpose was to encourage greater self-sufficiency in oil consumption for Canada. The tax reduces the country's competitiveness by distorting the consumption of energy products and increasing the cost of transportation relative to services available in the United States. Instead, the primary political support for the tax comes from proponents of curbing pollution from the oil products used in transportation. As an environmental tax, however, the fuel

excise tax is far too narrow in application; it does not apply to many toxic energy sources. In this regard, one could improve the system by levying environmental taxes on consumption activities according to their impact on the use of air, water, and soil. Some European countries and US states are making greater use of environmental taxes as part of their tax structure.

Tax Policy for Creating the Canadian Advantage

Tax policy can be a powerful tool for creating the Canadian advantage, but taxes can also be a major impediment for improving the population's standard of living. If we want to create a significant Canadian advantage through a better tax structure, fundamental reform is needed. Governments should consider the following types of reforms to improve Canada's fiscal competitiveness:

- *Replace the income tax with an expenditure tax.* An expenditure approach to taxation would result in a significant reduction in taxes on investments and savings. Canadians would have greater opportunity to save for their future needs as well as invest in the country's productive capacity. Businesses would find Canada an unequaled environment for investment, and they would thus contribute to a dynamic economy. Moving to an expenditure tax could be achieved at the personal level by removing the limits on contributions to pension and RRSP savings and allowing people to earn interest, dividends, and capital gains free from tax. At the business level, a tax on value added could replace corporate income and capital taxes (Bird and Mintz 2000).
- *Implement a dual-rate progressive personal tax on expenditure with income-tested benefits.* Canada could have one of the world's fairest and most efficient tax systems, creating the greatest incentives for work, entrepreneurship, and risk taking while maintaining a progressive tax structure. What is most important is to recognize the principle that a progressive tax system

can accomplish significant redistribution when average tax rates (rather than marginal tax rates) rise with earnings. An exemption level reflecting minimum consumption requirements, income-tested benefits, and a dual-rate tax structure could best achieve distribution and efficiency objectives. Marginal tax rates should, however, be kept at levels as low as possible — high rates approaching 100 percent should be avoided.

- *Increase reliance on taxes that have less impact on Canada's competitiveness.* Some taxes, such as payroll, property, and excise taxes, have less effect than others on the country's competitiveness because they fall on relatively immobile bases or are more directly related to consumption.
- *Increase reliance on taxes according the user-pay principle.* As already discussed, taxes that are levied in relation to the cost of providing public services are both efficient and fair. They also encourage greater political accountability and transparency in public decisionmaking. Although user-pay taxes can fall more heavily on the poor, a progressive expenditure tax with income-tested benefits could better achieve distribution objectives.

Conclusion

To create the Canadian advantage, we need smart expenditure, debt, and tax policies. Given that the current policies of Canadian governments are eroding the country's competitiveness, it is important to cut back public debt, review public expenditure programs to improve their effectiveness, and reduce and structurally reform taxes. Those reforms should include shifting taxes on investment and savings to increase reliance on consumption taxes (including those based on the user-pay principle for the consumption of public services), payroll taxes, and property taxes. Implementing the proposals presented in this chapter would go a long way toward making Canada more competitive in an increasingly integrated world economy.

6 Epilogue: A Portrait of the Future

Imagine that the year is 2015. Canada is now the "northern tiger," with an economy growing faster than that of almost all other industrialized countries. It is regarded as the best place in the world to work and live. The concerns that many Canadians had about their sovereignty have virtually disappeared.

Average per capita incomes in Canada are among the highest in the world, surpassing those of the United States. Unemployment rates are running at 4 percent of the workforce. Regional and income inequality have been reduced. Immigration from the United States is at an all-time high, accounting for almost one-third of total immigration, while emigration has decreased.

Much of this success can be attributed to smart government policies that have created the Canadian advantage during the recent past. Canadians have been bold in rethinking the role of government in the economy and, as a result, have created one of the most dynamic economies in the world. The public policies that have been adopted are distinctive, creating efficient and effective programs unlike others in the world.

- The federal and provincial governments have reduced public debt by C$20 billion per year since 2000, and it now stands at just 25 percent of gross domestic product (GDP).
- Total government expenditure has increased by not more than 3 percent per year. With savings coming from lower interest expenses on public debt and the elimination of ineffective public programs, such as business subsidies, increased public expenditures on education, infrastructure, and other necessary public services that Canadians cherish have been easily accommodated. The review process of public programs, keeping them up to date and efficient, is the envy of the world.
- With a high rate of growth in the economy and constraints imposed on increases in public spending, a 15-year program of tax cuts has resulted in a 25 percent reduction of government revenues to 33 percent of GDP. Canada now has one of the most tax competitive regimes in the world, with governments offering effective and efficient public services that are among the best in the industrialized economies.
- Canadian high school students achieve the highest scores on international tests. High school dropout rates have fallen, and three Canadian universities are listed among the world's top schools. Many countries now examine Canadian experiments to improve the performance of the education system, creating more choice and competition among schools. Substantial investment has reformed education and training programs, making Canada's education system one of the world's most effective.
- Like many other countries, Canada has increased its spending on health care. But it has also reformed its health care system, maintaining universality of services but allowing for competition among suppliers, thereby enhancing delivery. Canada now has the world's most cost-efficient system, with the best technologies and physicians. Medical research in Canada is world renowned.
- Canadian governments, along with private partners, have substantially improved the country's transportation and communications infrastructure to accommodate high economic growth.

- Canada has one of the highest rates of innovation in the world, brought about by substantially increased rates of investment in machinery and other capital goods, high education levels, and an economic environment particularly attractive for jobs.
- Canada has improved its delivery of social services. One result has been a sharp reduction in unemployment and poverty, especially among aboriginals. Employment insurance programs have been reformed to reduce the incentive for businesses to lay off workers. Community-based social services are providing well-targeted financial and nonfinancial support for those in need.
- Shifting taxes away from investment and savings to consumption bases has been a substantial reform. Canada has adopted a personal expenditure tax and more taxes based on the user-pay principle. It has reformed business taxes by reducing rates and eliminating distortions that impeded the business sector from taking full advantage of best economic opportunities.

The prime minister recently accepted a United Nations award presented to Canada for being the best country in the world in which to live. Canada was also credited for having the most innovative economic and social policies, which have led to its dynamic growth. The prime minister made it clear that the award belonged not to her, but to the Canadian people for their sacrifices, energy, and hard work.

This would be a nice conclusion, wouldn't it?

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